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STATE MEDICAL ASSOCIATION OF TEXAS

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(House of Delegates, April 29—Related Organizations, April 30)

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Please cancel reservations promptly if rooms are not needed.

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President's Page

TRAINING PROGRAM FOR PHYSICIAN SPEAKERS

Recent experiences have emphasized again with great force the need for training physicians to speak intelligently against compulsory health insurance and other un-American ideologies which a few starry-eyed zealots seek to impose on our country. Already, many medical societies have instituted programs to train physicians along these lines and great benefits have accrued therefrom.

The program consists of two phases: (1) additional education of doctors in medico-economic and political matters and then (2) training them and/or their friends to impart this knowledge to others—both individuals and organizations.

Why do I discuss this matter? Some two weeks ago, I spoke at a Parent-Teacher Association meeting at which the President's compulsory health insurance program was discussed. The speaker who preceded me, favoring the program, read extensively from Federal Security Administrator Oscar Ewing's comments on American health and particularly the compulsory health insurance phase.

Then on introducing me, the chairman said, "On New Year's night I tried to get a doctor for my child. My family doctor could not come; later I learned he was at a New Year's party. I did get the next doctor I called, however, and he was very nice.

"Nevertheless," she continued, "I want to assure all of you here that it is much easier to get a doctor when one is sick than to get him to attend a meeting and defend his profession's views on the President's health program and compulsory health insurance. We wanted information for this meeting tonight—we wanted both sides of the issue in the traditional American way. One telephone call obtained a speaker to defend the President's program this evening, but I called six doctors before finding anyone who was interested in presenting medicine's side. The sixth said he would try to find a physician speaker.

"Dr. Gambrell," she warned, "if you doctors have a ground on which to stand in this matter and don't show greater willingness to educate the public to your viewpoints, you have no right to expect anything except defeat."

I told her I would relay her sentiments to the doctors of the state.

This story is not overemphasized; none of the excuses given by the doctors who refused to speak were justifiable, reasonable, or acceptable to the chairman.

Four outstanding lessons can be gained from this experience:

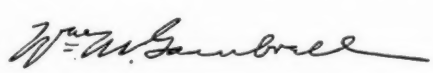
1. The people prefer not to express themselves on the issues of compulsory health insurance and the President's socialistic program until they have heard all the facts.

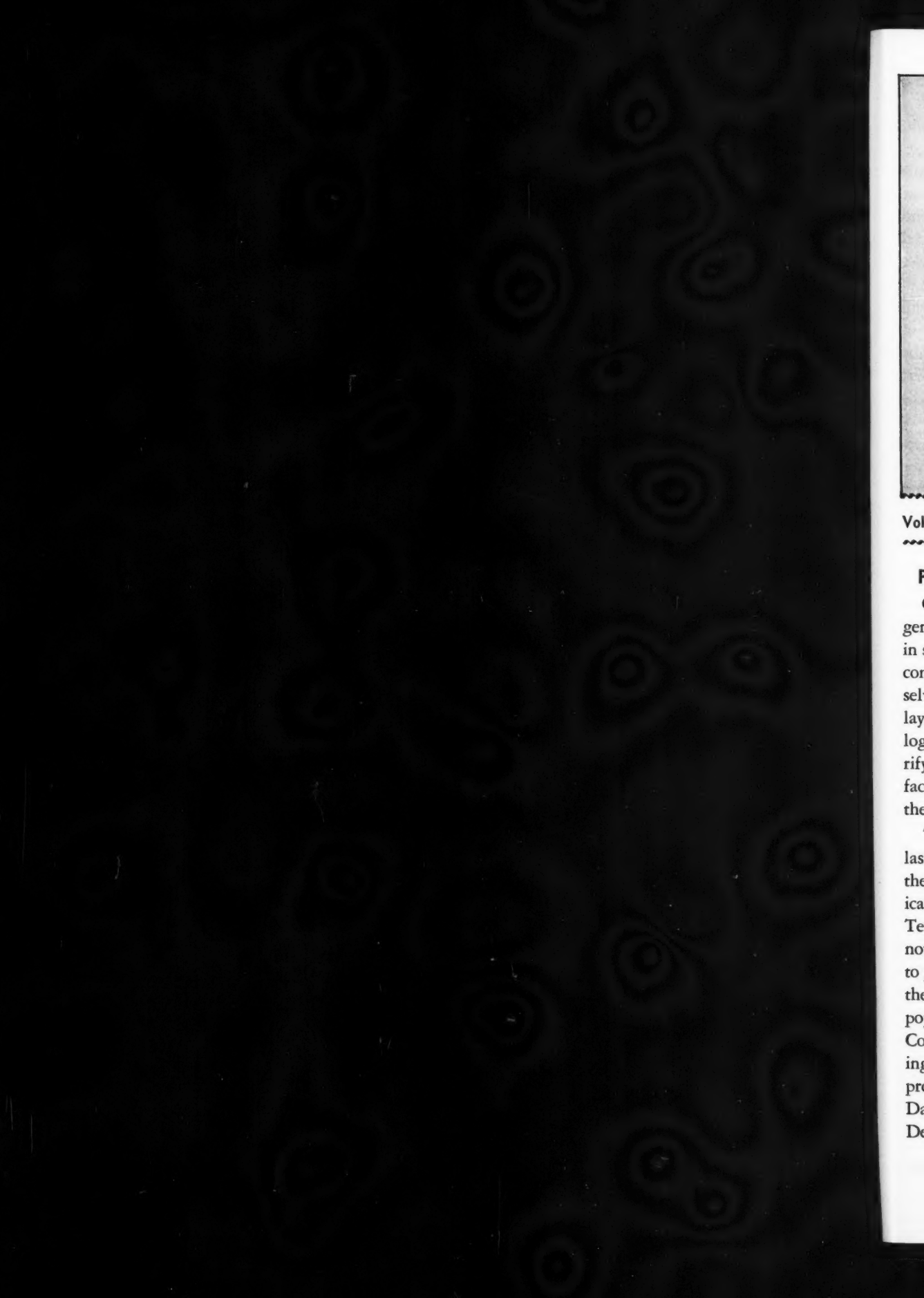
2. They believe correctly that it is proper and logical for doctors to give a vast amount of information concerning these measures and they have every right to expect our cooperation.

3. Silence from the medical profession, particularly from practicing physicians, will not stop the people from considering these issues; it will only force them eventually to draw conclusions based on misstatements of fact, half truths and distortions from those sponsoring this un-American and socialistic legislation.

4. These misstatements and misrepresentations can be refuted most effectively by doctors.

Therefore, I urge anew that physicians recognize their individual and collective responsibilities. No one medical society or doctor is obligated more than another. The example set by societies which have organized study courses should be followed by other groups. Furthermore, physicians should strive to become more proficient speakers against socialized medicine or any other effort to substitute discredited, foreign-born schemes for the sound and strong principles of economic freedom which have made ours the greatest nation in history.





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PREPARATION FOR CIVIL DEFENSE

Civilian physicians in time of national emergency will have a tremendously important role in salvaging human life. Before such emergency comes, they have a responsibility to equip themselves to assume this task and also to educate laymen in some of the phases of atomic, biologic, and chemical weapons which are so terrifying to the uninitiated but which can be faced without dismay by those who understand them.

The Subcommittee on Civil Defense named last September from among the membership of the State Council on National Emergency Medical Service is opening a campaign to arouse Texas physicians to the necessity of preparing now for any emergency which may come and to provide them with sufficient information that they can offer the leadership which the general populace expects and requires. The Executive Council of the State Medical Association, meeting February 4 in Austin, wholeheartedly approved the program which Dr. Ozro T. Woods, Dallas, chairman of the Subcommittee on Civil Defense, outlined.

Federal legislation has authorized a Civil Defense Administration now being developed. Treatment and organizational channels are being standardized at the national level, and stockpiling of materials and supplies is being handled regionally. A State Civil Defense Administration, paralleling the State Disaster Relief Council, has been created in Texas by action of the Governor and will be approved by pending legislation. Advice and assistance in organizing will come from this state agency. However, the maintenance of health services can be achieved only on the local level, and cities and counties must establish official civil defense bodies to coordinate and execute activities at that level.

The Subcommittee on Civil Defense, which has been appointed as official advisory council to the Health Service Division of the State Civil Defense Organization, recommends that each county medical society appoint a civil defense committee to work in an advisory capacity at the local level and to be the focus for civil defense activity by all doctors in the area. The Subcommittee expects to provide these committees with printed information and speakers so

that no doctor will have an excuse for being uninformed along the medical and health lines which modern warfare dictates.

Members of the Subcommittee on Civil Defense and the Committee on Mental Health have emphasized that the mental attitude of the civilian population will be of utmost importance to its survival and rehabilitation in time of disaster. Physicians can do much to keep morale high by learning about the new strange weapons and passing on to luncheon clubs, parent-teacher organizations, and other lay groups enough of an understanding of such matters that the fear of the unknown turns to preparedness for the known. The panic of a frightened people can cost more in loss of life and property than the weapons which cause initial destruction.

No physician can afford to be complacent in the face of present world conditions. The Subcommittee on Civil Defense will provide every encouragement and help possible, but the problem of preparedness, without which a sudden enemy attack could prove devastating, finally rests on the individual. Each physician himself must become prepared. He must attempt to understand the effects of atomic radiation, nerve gas, and the other weapons which are available now. He must forget his pet methods and adhere to the standardized procedures. He must use every opportunity to educate laymen to take care of themselves and help take care of their fellows when disaster comes. Finally, he must overlook petty jealousies, learn to accept official protocol, and cooperate with other professional and official personnel to the end that a plan serviceable under the most trying circumstances can be perfected.

Physicians must see that a good health division which will function effectively is organized within the civil defense framework. If they fail to do so, they will be held accountable by the citizenship.

OFFICER PROCUREMENT GAINS MOMENTUM

During January the central office of the State Medical Association assumed some of the same appearance it had during World War II. With the State Advisory Committee to the National Advisory Committee to the Selective Service System given definite authority by the federal government for making recommendations with respect to the procurement and assignment of medical officers and with funds allocated by the federal government to help carry on its work, the committee set up headquarters in the Association's building.

Tod Bates, executive secretary of the Association, had been named previously as executive secretary of the State Advisory Committee, and a staff, files, and supplies for the medical officer work are being developed. A separate telephone line (2-4164) has been installed for the exclusive use of calls on military business. Collect calls on this number (not on the State Medical Association number) will be accepted from physicians who need information about their military status. Calls pertaining to anything other than the doctor draft law should be placed on the Association's number.

Dr. R. A. Trumbull, Dallas, chairman of the State Advisory Committee, and Mr. Bates returned from the Washington conference, at which a dozen of the nation's top figures discussed the military situation, especially as it affects physicians, dentists, and veterinarians, convinced that the people of this country are in for years of discomfort, inconvenience, and hardship. The program for using the medical profession to best advantage is ahead of plans for other personnel, and except for a few questions which need to be clarified when Public Law 779 (the doctor draft law) is rewritten, the procedure for inducting medical officers is clear and is being put into effect without delay. Information about this procedure appears in the News Section of this JOURNAL.

The authority which the State Advisory Com-

mittee can exert in relation to registrants under the doctor draft law who have not applied for commissions is considerably less than can be exercised in relation to medical officers with reserve commissions. The committee members therefore are strongly advising registrants in Priorities 1 and 2 to apply for commissions. Another argument in favor of applying for a commission is that physicians who are inducted by Selective Service are not eligible to receive the $100 a month bonus for volunteering and are not even assured of being attached to a medical unit.

Physicians within the age limits for medical service are urged to ascertain exactly where they stand in relation to the draft law and make plans for the future accordingly. The State Advisory Committee, through its executive secretary, stands ready to be of service to any Texas physician who needs information about the military situation, but it has no choice but to cooperate in providing medical manpower where and when it is needed. It is of the greatest importance that the State Advisory Committee be kept informed about changes which might affect the status of a physician with respect to military induction, for only by being aware of all the pertinent facts can it act fairly and effectively.

HEALTH LEGISLATION PENDING

Numerous bills affecting medicine and health have been introduced into the recently convened Eighty-Second Congress and Fifty-Second Texas Legislature. It behooves each member of the State Medical Association to determine what effect their passage would have and to exert the influence of an interested citizen in favor of or in opposition to them.

The Council on Legislation of the State Medical Association has recommended the following action with respect to bills in the Texas Legislature:

Auxiliary Nurses Bill (S. B. 54, H. B. 47) to license as auxiliary nurses those meeting certain qualifications. Support.

Narcotics Bill (H. B. 134) to provide compulsory treatment of narcotic addicts and to make the use of certain narcotic drugs unlawful. Support.

Amendment to Workmen's Compensation Insurance Law (H. B. 155) to allow free selection of doctors. Support.

Identification of Practitioners of the Healing Arts Bill (S. B. 61, S. B. 75, S. B. 111) to require persons licensed to practice the healing art to identify in the professional use of their names the system of the healing art which they employ. Support.

Medical Technologists Bill (as yet unintroduced) to license medical technologists and to place in their hands control of laboratories. Oppose.

Bill Making Practice in a Town of Less than 2,500 Population Prerequisite to a Permanent License (H. B. 151). This bill would provide that licenses to practice medicine in Texas must be temporary until the practitioner has practiced twelve months in a town of less than 2,500 population, at which time he may become eligible for a permanent license. Oppose.

Bill Permitting a Temporary License Between Meetings of the Board of Medical Examiners provided that all other requirements are met by the applicant (as yet unintroduced). Support the introduction of such a bill.

In the national Congress there have been introduced a multitude of bills relating to medicine and health. Some of the more significant follow with a notation of the action which has been taken by the Legislative Committee and the Executive Committee of the Board of Trustees of the American Medical Association.

Federal Aid to Medical Education (S. 337). Disapproved. It is the feeling that federal funds will bring federal control.

Local Public Health Units (S. 445, H. R. 274, H. R. 913). Approved, provided the measure is modified so that the Surgeon General is somewhat governed by the Advisory Committee, that in court actions equal weight is given to the Surgeon General and the appealing state, that the Surgeon General's sole authority over assistance funds is limited to an audit of the state's expenditures, and that certain word changes are made in the definition of "basic public health services" and laboratory facilities.

Income Tax Deductions for Health Insurance (H. R. 14). Approved. H. R. 87 on the same subject has been approved with the suggestion that commercial insurance be included. H. R. 151, also on the same general subject, has been disapproved because it is predicated upon the passage of another bill which has been disapproved.

School Health Services (H. R. 42). Disapproved because of Section C, which would permit medical treatment of all children regardless of the economic status of the parents; administrative features; court procedure; and cost.

National Health Act (H. R. 146). Disapproved because it amounts to federal subsidy of voluntary health insurance, which would lead to federal control; discriminates against commercial health insurance; and does not provide for physicians on the Federal Health Council.

Medical Care for Service Men's Dependents (H. R. 342). Disapproved because of inability to provide the services requested and the impracticability of having so many dependents as camp followers.

Nursing Education Act (H. R. 910). Action has been deferred pending further study of this bill to provide grants and scholarships for education in the field of nursing.

Selective Service Extension (S. 1). This bill, sponsored by the Department of Defense and introduced by Senator

Lyndon Johnson of Texas, would amend the present selective service law to bring about universal military training and the induction of youths at 18 years of age. Medically, the bill is of importance primarily because (1) the President would be authorized to provide for physical and mental rehabilitation for rejected persons through the civilian executive departments of the government (for example, Public Health Service or Veterans Administration); (2) the doctor draft would be extended until June 30, 1953, and the term of service lengthened from twenty-one to twenty-seven months; and (3) 75,000 students of medicine, the sciences, engineering, and the humanities would temporarily be released from active service annually for three years—the language of the doctor draft providing for deferment of at least the number of premedical students equalling the present level of enrollment is repealed. This bill has not been acted upon officially by the appropriate American Medical Association committees, but it appears that the rehabilitation provision could be particularly dangerous if the bill passes in its present form.

It is difficult to keep abreast of bills as they grind through the legislative mill, yet unless physicians attempt to keep reasonably well informed, they can neither express their views forcefully to their representatives nor explain to laymen why certain laws would be good and others bad. Both elected representatives and concerned laymen look to the medical profession for advice concerning health measures, and such advice must be based on information and understanding.

ORIGINAL ARTICLES

LOW BACK PAIN

I. Studies on Pain Intensity in Obstetrics Including Causes, Reactions, and Methods of Control

CARL T. JAVERT, M.D., and JAMES D. HARDY, Ph.D.,
New York, New York

ACCURATE clinical, neurologic, physiologic, and pharmacologic information is necessary to recognize and treat pain in obstetrics. This information should include (1) the amount of pain in the various stages of labor, (2) the underlying causes of pain, (3) the patient's reaction to pain, (4) the psychologic aspects of pain, (5) various methods of pain control, (6) the effect of pain control methods on the duration of labor, and (7) the effect of pain control methods on the infant.

STUDIES ON PAIN INTENSITY

Quantitative measurements of pain intensity in labor have been made before and after the administration of analgesia and anesthesia,[5, 12, 13] using the Hardy - Wolff - Goodell dolorimeter.[6] This apparatus (fig. 1) focuses a beam of light on the skin of the hand or forearm (we have preferred the latter) for three seconds, producing a variable amount of heat. The patient compares this thermally-produced pain sensation with the actual labor pain. Pain threshold measurements require approximately 220 millicalories of heat per second per square centimeter to produce the slightest perceptible pain, and they were remarkably uniform in the 27 patients so studied. When the thermal stimulus is increased 100 per cent to 440 millicalories, a severe or ceiling pain is produced, which is accompanied by tissue destruction resulting in a third degree burn. The range of millicalories from 220 to 440 has been converted into another unit of measure called the "dol," the mildest pain above the threshold being 1 dol and the severest being 10 dols; the development of this pain scale has been discussed elsewhere.[7, 8]

More than 500 determinations have been made on 27 obstetric patients during the various stages of labor, the average result of four or five tests being shown by an alphabetical letter for each patient (fig. 2). While there is considerable variation from patient to patient, it is readily apparent that pain intensity increases as labor progresses and is roughly proportional to the amount of cervical dilatation. Early in the first stage the labor pains are mild, simulate menstrual cramps, produce a slight backache, and have an intensity of 2 or 3 dols. There is a gradual increase to 5 or 6 dols as the cervix dilates and at this time most

From the Departments of Obstetrics and Gynecology and of Physiology, Cornell University Medical College and the Woman's Clinic of the New York Hospital.

Read before the joint meeting of the Sections on Surgery, Gynecology, and Obstetrics, State Medical Association of Texas, Annual Session, Fort Worth, May 4, 1950.

patients request analgesia. Just prior to full cervical dilatation the pain intensity reaches 8 to 10 dols.

After the head passes through the cervix pain intensity decreases slightly to a level of 6 to 8 dols for a short time as the head enters the upper vagina. Further descent to the vulva and perineum is accompanied by an increase in the intensity up to 10.5 dols. Reduplication of these pains produces third degree burns so that only a few determinations are available at this stage of labor; however, most patients are appreciative of some form of anesthesia at this time.

Measurements of pain intensity (dolorimetry) in labor on human subjects provide an excellent opportunity for the pharmacologic testing of the analgesic action of various drugs.[12] Heretofore, such experimentation has been limited to animal studies. It is hoped that the method will be of aid in the clinical testing of newer and better analgesics for the relief of pain in obstetrics.

CAUSES OF PAIN IN LABOR

We agree with Moir[16] that the pains of labor are not due primarily to the uterine contractions. This view is corroborated by general observation, since painless but strong uterine contractions (Braxton Hicks sign) at the end of pregnancy often are so pronounced that the patient may be admitted in false labor. Experimentally, intravenous Pitocin has been observed to produce strong painless uterine contractions. Finally, the contractions are not too painful when the cervix is fully dilated and there is no perineal resistance as in a grand multipara.

Pain in the first stage of labor is due to the dilatation of the cervix[12, 16] which is brought about by the contractions of the uterus as it rhythmically overcomes resistance at this point. Gradual dilatation from 1 to 10 cm. is accompanied by a gradual increase in the pain intensity from 1 to 10 dols.[5] The visceral pain sensation traverses the autonomic nervous system[12] and often is referred to the sacro-iliac area as a low backache, which can be relieved by rubbing or an ice-bag[22] and by analgesics.[12]

As the head enters the upper vagina through a fully dilated cervix, the pain intensity decreases slightly to a level of 6 to 8 dols, since the upper vagina, when observed in the knee-chest position, is capable of a tremendous ballooning out, and is not unduly stretched. However, the vagina tapers forward to the vulva and as the head dilates the vulva, the pain intensity reaches its greatest height, namely, 10.5 dols, the thermal stimulus needed to reproduce this pain causing a third

TABLE 1.—*Conduct of Natural Labor Using Morphine and Demerol Analgesia and Local Procaine Infiltration Anesthesia.*

Primipara	Stage	Multipara
	FIRST	
Cervix 2-3 cm. dilated (pain intensity approximates 2-4 dols).* First injection Morphine 10 mg. and Demerol 100 mg. for average weight.† Morphine 15 mg. and Demerol 100 mg. for overweight.‡		Same as for primipara.
Cervix 4-5 cm. dilated (4-6 dols). Second injection (if indicated by pain) Morphine 10 mg. and Demerol 50 mg.† Morphine 15 mg. and Demerol 100 mg.‡		Same as for primipara if indicated.
Cervix 7-8 cm. dilated (7-9 dols). Third injection (if indicated by pain) Morphine 10 mg. and Demerol 50 mg.† Morphine 15 mg. and Demerol 100 mg.‡		Third injection seldom required. Most patients moved to delivery room.
	SECOND	
Cercix fully dilated. Usually no further medication necessary. If no analgesia has been given, nitrous oxide and oxygen may be indicated.		Same as for primipara.
Vulva beginning to bulge. Patient taken to delivery room, ordinarily able to assist self on and off stretcher. Local procaine infiltration usually suffices for routine episiotomy (fig. 6a and b). Bleeding usually slight. At times pudendal block and low spinal anesthesia indicated. Expulsion of head (fig. 6c) virtually painless.		Same as for primipara. Some patients will not need episiotomy because of marked vulvar relaxation.
During and after delivery patient inhales oxygen. Clamping of cord delayed until cord ceases to pulsate and child is pink and in good condition. Meanwhile, nasal and buccal mucus has been aspirated with soft rubber ear syringe.		Same as for primipara.
Patient hears first cry, often witnesses delivery except when stillbirth or abnormal child delivered, in which instance nitrous oxide-ether anesthesia is given.		Same as for primipara.
Pituitrin 1 cc. given intramuscularly after delivery of infant.		Same as for primipara.
	THIRD	
Placenta often expelled spontaneously with gentle fundal assistance. Minimum blood loss for both fundus and episiotomy.		Same as for primipara.
Ergotrate 0.2 mg. given intramuscularly.		Same as for primipara.
Repair of episiotomy begun either before or after separation of placenta. Additional infiltration with Procaine may be necessary and causes edema so that sutures will not be too tight. If patient becomes restless, nitrous oxide and oxygen may supplement local anesthesia.		Same as for primipara. Edges of laceration can be infiltrated with Procaine and sutures inserted.
	FOURTH	
When uterus hard and firm without excessive bleeding, patient can assist self to stretcher and bed without fear of hemorrhage.		Same as for primipara.
Local Procaine infiltration makes first several hours after delivery more comfortable, also keeps obstetrician from tying sutures too tightly.		Same as for primipara unless perineum is intact.
	PUERPERIUM	
After-pains due to retractions of cervix (2-4 dols) can be relieved by codeine 0.03 Gm. and aspirin 0.6 Gm. orally.		Same as for primipara.
Early rising promotes well being, involution, lactation, and systemic elimination; permits repeated visits of patient with husband to nursery; permits showers; reduces nursing care.		Same as for primipara.
Episiotomy usually heals *per primum* with minimum edema and discomfort if subcuticular stitch has been used.		Same as for primipara.

*Hereafter all measurements of pain intensity are approximate.
†Average weight considered to be from 120 to 150 pounds.
‡Patients weighing more than 150 pounds considered overweight.

degree burn on the skin. Pain in the second stage of labor involves somatic sensory nerves[12, 13] and occurs concomitantly with the uterine contractions, but it is caused chiefly by tearing and stretching of the vulva and perineum. When marked relaxation of the vulva and perineum occurs or when an adequate episiotomy under local procaine anesthesia (figs. 6 and 7) eliminates vulvar resistance, only a little pain is experienced from the uterine contractions per se in the second stage.

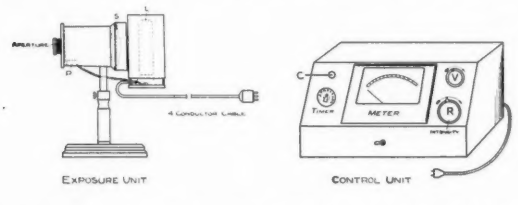

FIG. 1. Diagram of dolorimeter (Hardy-Wolff-Goodell pain threshold apparatus) showing exposure and control units as follows: *P*, shutter mechanism; *S*, convex lens; *L*, 500 watt incandescent lamp; *R*, Rheostat; *V*, Vernier adjustment; and *C*, control button for shutter mechanism.

Some proponents of the management of labor by "natural childbirth," including Thoms, have stated that an episiotomy or laceration at the time the head is crowning the vulva is relatively painless because of a "natural anesthesia" produced by pressure. Paradoxically, this observation is probably true, since the patient already is suffering pain of 10.5 dols, which in itself is the result of tissue destruction. Consequently, the superimposed episiotomy is not perceived since there is no summation of two pains.

The two chief causes for the pain in labor, namely, the dilatation of the cervix and of the vulva, varies from patient to patient with regard to the degree of resistance of the tissues involved, for example, primiparas and multiparas. The variability is apparent from the scattergram of pain intensities shown in figure 2.

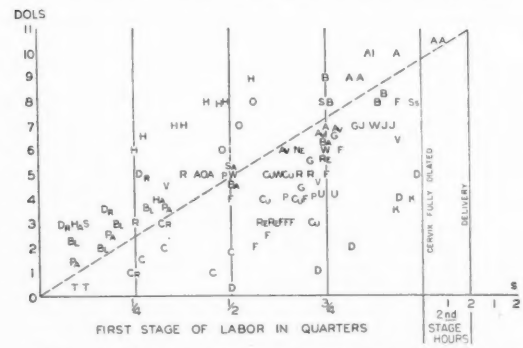

FIG. 2. Diagram representing pain intensity during labor in 27 patients as measured in dols. Dotted line represents cervical dilatation.

Numerically, the average primipara with longer first and second stages of labor has more labor pains than the average multipara because of the greater resistance of the tissues of the cervix and vulva; however, the intensity of each individual pain is about the same in the first and second stages unless the cervical os is patulous and the vulvar outlet markedly relaxed.

REACTION OF PATIENT

The reaction pattern of a labor patient varies a great deal, as every physician knows, especially when the family implores him to do something when the cervix is just beginning to dilate. Under such circumstances measurements have shown that the pain intensity is only 1 or 2 dols and although the patient may cry bitterly, dolorimetry will show that she is deceiving the observers. The cervical dilatation in centimeters provides the clinician with an approximate measurement of pain intensity in dols, as shown by the dotted line in figure 2. Some patients are more emotional than others so that the behavior pattern is a poor index of pain perception; however, the pattern has led to statements that the patient has a "very high" or "very low" threshold for pain. In our 27 patients the pain threshold was remarkably uniform before, during, and after labor.[12]

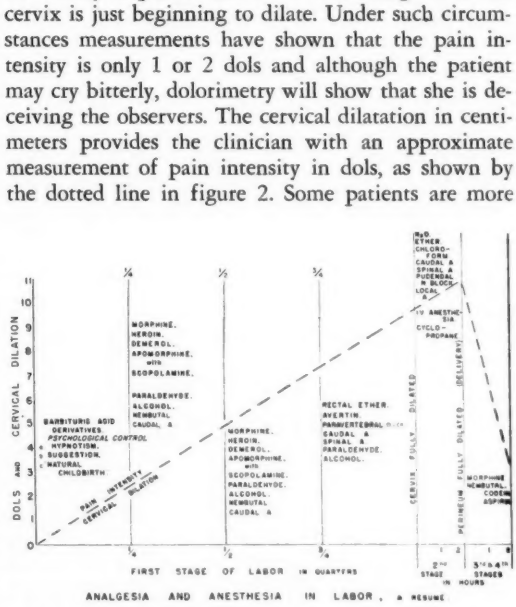

FIG. 3. Diagrammatic summary of the many agents and methods used during the past century to control pain in labor.

PSYCHOLOGIC ASPECTS

From time to time renewed interest develops in the psychic control of pain in labor. Hypnotism was revived by Schultze-Rhonhof[19] in 1922. Suggestion has been advocated by others. Read has popularized a fear-tension-relaxation hypothesis known as "natural childbirth" in England and has lectured on the subject in America, where Goodrich and Thoms also have reported on the method. Since no single method or agent will suffice for the entire labor because of the complex neurophysiologic mechanisms involved, some "natural childbirth" patients require analgesia.[17, 22]

Recently Thoms has published a book[22] on the use of "natural childbirth" in his clinic, which considers the antepartum classes for mothers with the discussion of the physiology of normal pregnancy and labor, certain exercises similar to yoga for use in labor, and "rooming in." In the book nothing is said about the management of a patient schooled to expect a normal pregnancy and delivery faced with prolonged labor, toxemia, cesarean section, antepartum hemorrhage, intrauterine death of the fetus, difficult forceps delivery, cord around the neck, and asphyxia. Our experience has shown that when complications arise in these patients they become completely unnerved and actually despise the method. It is our opinion that the classes also should prepare the patient for abnormal events. Many clinics, including the one of the late Dr. Stander, have conducted classes for mothers and prospective fathers without the fanfare and publicity which has greeted "natural childbirth." It seems illogical to employ methods used in England, where midwives perform 70 per cent of the deliveries,[22] in our own country, where physicians perform most of the deliv-

TABLE 2.—*Analgesia and Average Duration of Labor According to Combination of Agents Used by Various Authors.*

Analgesia	Author	Year	Duration of Labor (hr.) Primiparas	Multiparas
Morphine-scopolamine	Gauss	1906	18	13
Pentobarbital-scopolamine	Irving, Berman, and Nelson	1934	14	9
Heroin	Lund and Harris	1943	12	10
Demerol-scopolamine	Schumann	1944	12	7
Apomorphine-scopolamine	Hershenson and Brubaker[9]	1947	11	6
Morphine-Demerol	Javert and Hardy	1950	13	8
"Natural Childbirth"	Read	1949	18	9
Unpremedicated	Irving	1943	16	12
None	Föderl	1926	13	8

TABLE 3.—*Asphyxia Neonatorum in 100 Patients After Morphine and Demerol Analgesia and General and Local Anesthesia.*

Analgesia and Anesthesia	Primiparas — No. of Patients	Primiparas — % with Asphyxia	Multiparas — No. of Patients	Multiparas — % with Asphyxia
Morphine and Demerol; nitrous oxide, oxygen and ether	35	40	15	42
Morphine and Demerol; local or spinal Procaine anesthesia; and oxygen	35	4	15	0
Total	70		30	

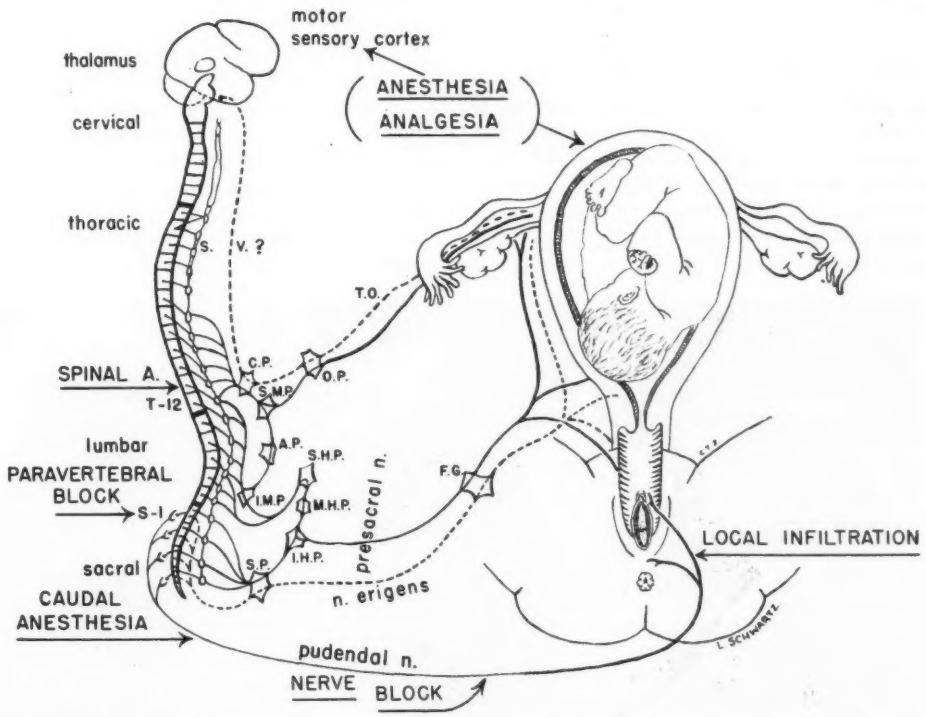

FIG. 4. Schematic diagram of the innervation of the organs of parturition and the sites of action of many of the agents and methods given in figure 3.

Sympathetic system:

C.P., O.P., A.P., S.P.—Celiac, ovarian, aortic, and sacral plexuses.

S.M.P., I.M.P.—Superior and inferior mesenteric plexuses.

S.H.P., M.H.P., I.H.P.—Superior, middle, and inferior hypogastric plexuses (presacral nerves)

F.G.—Frankenhäuser's ganglia, which are bilateral although only one is shown.

Parasympathetic system (dotted lines):

V.—Vagus nerves which are bilateral although only one is shown.

n.—Erigens.

eries. Reid and Cohen[18] recently have asked for proof that "natural childbirth" is superior to modern obstetric practice.

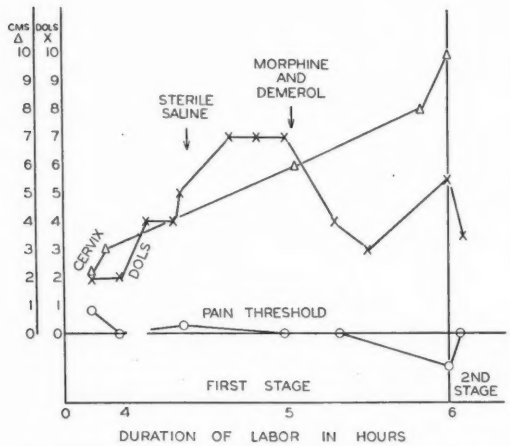

FIG. 5. Diagram showing the reduction of pain intensity after a single injection of morphine 15 mg. and Demerol 50 mg. in a patient who also received a placebo injection.

METHODS OF CONTROL

Any attempt to control pain in obstetrics requires a knowledge of the complex neurology, physiology, and pharmacology of the organs of parturition. It has been shown above that most of the pain in the first stage of labor is due to dilatation of the cervix and in the second stage to dilatation of the vulva. Pain in the first stage is controlled by agents acting through the autonomic nervous system and in the second stage through the somatic sensory fibers of the pudendal nerves.[12, 13]

Prior to 1847 little or nothing was given to relieve the pain of labor, although William Smellie often gave laudanum to his patients.[21] Simpson administered ether and chloroform as the head was being born, the time of the greatest pain intensity.[21] Since then a large number of analgesic and anesthetic techniques and methods of pain relief have been developed, as summarized in figure 3. During the past century some methods became popular only to be discarded. From time to time renewed opposition to painless labor has been evident, and at various times methods of psychologic control have been advocated, such as suggestion, hypnosis,[20] and at present "natural childbirth."[4, 17, 18, 22]

The neurophysiology of pain in labor is so involved that no single method, agent, or technique is ideal for its relief. Instead, a combination judiciously employed seems to give the best results. During the first stage, when pain largely is due to cervical dilatation in which the autonomic system is concerned, a time-honored program for satisfactory relief of pain has included a preliminary dose of a barbiturate to allay fear and apprehension followed by the judicious injection of agents such as morphine, scopolamine, Demerol, heroin, and apomorphine, singly and in combination.[3, 9, 11, 12, 15, 19, 21] Pain intensity thus can be reduced from 6 or 8 dols to 2 or 4 dols.[12] Use of these agents is accompanied by a reduction in uterine activity, despite which the cervix may dilate as fast or faster than without them. During the second stage it has been customary to give nitrous oxide and oxygen

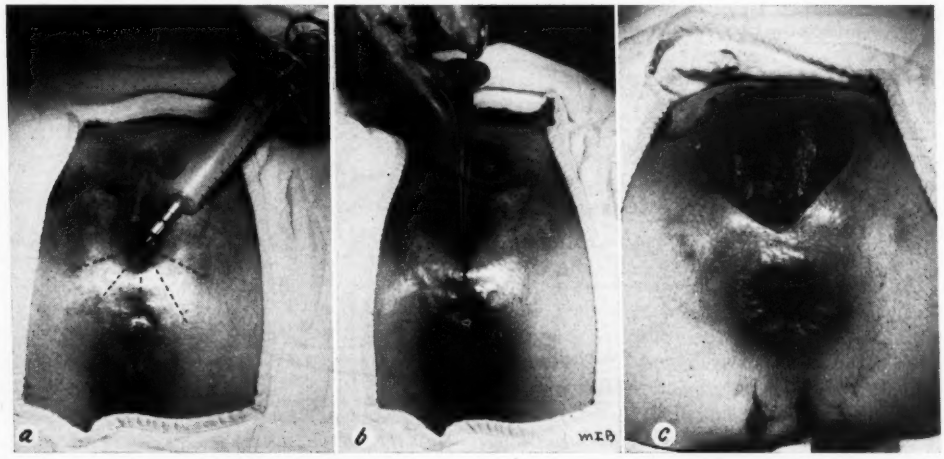

FIG. 6. a. Photograph demonstrating local Procaine infiltration of vulva and perineum, with care being taken to inject subcutaneously and subvaginally.

b. Median episiotomy is usually the procedure of choice. Bleeding is minimal.

c. Spontaneous expulsion of vertex is almost painless with local Procaine infiltration and episiotomy as shown in figure *a* and *b*, providing that the patient also has had morphine and Demerol analgesia.

by inhalation for an hour or two,[1] adding ether for the final delivery.

The many available methods and agents have been plotted against pain intensity and cervical dilatation in figure 3. Sturrock[21] has discussed various techniques in use up to 1939; Lull and Hingson[14] have discussed the use of continuous spinal and caudal anesthesia since then. The peripheral somatic nerves are stimulated by the stretching of the vulva, and simple local infiltration or pudendal nerve block is often sufficient for pain relief in the second stage. Local infiltration is simpler than the spinal, caudal, and even general anesthesia so often used. To be sure, the latter types of anesthesia may be indicated in some situations, yet local infiltration will suffice for the average patient. The site of action of the various analgesics and anesthetics has been correlated with a schematic diagram of the innervation of the organs of parturition in figure 4.

At present in selected patients we are using a combination of morphine, 10 to 15 mg. and Demerol, 50 to 100 mg., depending on the weight. This dose is repeated once or twice as necessary and the delivery accomplished with an episiotomy if necessary, using local infiltration or pudendal block anesthesia. Such a regimen is outlined for primiparas and multiparas respectively in table 1. Delivery is relatively painless, since the uterine contractions themselves are not very painful. The mothers can remain awake, hear the baby cry, observe the delivery, and otherwise enjoy the thrill of "natural childbirth" with little discomfort. The analgesic properties of morphine[12, 13] added to the euphoric and amnesic qualities of Demerol produce an effect resembling that of heroin. Sweating is reduced and some sleep induced, yet the patient can assist herself on and off the delivery table and is not unconscious. The effect of a single injection of morphine and Demerol on the pain intensity is shown in figure 5.

We have studied 10 patients prepared for "natural childbirth." One developed preeclampsia; 1 had a cervical dystocia and an extremely prolonged labor; another required a cesarean section; another had twins with fetal distress due to a cord complication in the second twin which required version and extraction. Therefore, only 6 of the patients so prepared had studies of pain intensity (fig. 7). Only 1 patient, Mrs. D., a multipara with a short labor and small baby, had the fortitude to complete the labor without analgesia and anesthesia. The rest had from one to three doses of morphine and Demerol at their request early in labor. Several were delivered under local or spinal anesthesia to complete the "natural childbirth" program. Several said that the morphine and Demerol in combination produced far better relaxation with less effort on their part than the deep abdominal breathing. When asked to compare the value of the exercises and the analgesia, they were unanimous in favor of the latter, especially several women whose uterine contractions had kept them awake for several nights before the actual onset of labor. One patient developed bilateral radial nerve palsy from lying for long periods on each side while learning to relax. Needless to say, the unexpected turn of events from the "natural" to the unnatural caused considerable fear and apprehension since the preliminary indoctrination had not taken complications into full account but had discussed primarily the normal pregnancy and labor.

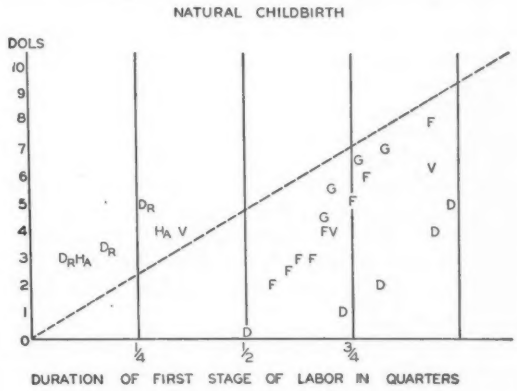

FIG. 7. Diagram showing pain intensity of 6 patients having "natural childbirth." Compare with figure 2.

ANALGESIA AND DURATION OF LABOR

Some current medical opinion holds that analgesia actually prolongs labor. This argument is refuted by a review of 2,686 ward patients delivered at the New York Lying-In Hospital in 1937. Of these only 738 patients or 27.4 per cent received morphine and scopolamine analgesia with or without rectal ether. In other words, 72 per cent received little or no analgesia and can be said to have had "natural childbirth." The incidence of prolonged labors (more than thirty hours) was 10 per cent.

In 1950 among 3,824 premature and full term deliveries 3,497 patients received morphine, scopolamine, Demerol or barbiturate analgesia, and the incidence of prolonged labors had decreased to 1.6 per cent. It is obvious from this evidence, as well as from our own experience, that patients with prolonged labors received analgesia because the labor was long and that the analgesia did not appreciably prolong the labor.

It is also apparent from table 2 that various other analgesic agents do not prolong labor. Control data

also is offered, including Read's series of cases, many of whom had "natural childbirth," which is based on a pain-fear-tension-relaxation syndrome. It appears that the average duration of labor for multiparas and primiparas is as long with "natural childbirth" as when heroin, Demerol and scopolamine, and morphine and scopolamine are employed.

ANALGESIA AND THE INFANT

It is obvious that an adult dose of morphine is too much for a newly born infant if injected directly; for years this argument has been used when the mother clamors for analgesia. Many studies uphold the statement that asphyxia neonatorum is greater when analgesics are employed in the first stage of labor. Seldom has the asphyxiatory effect of analgesia alone been clearly demonstrated, nor have the asphyxiatory effects of anesthetics alone, such as nitrous oxide, ether, and chloroform, been accurately appraised. When both analgesia and anesthesia have been used, it is improper to evaluate asphyxia neonatorum in terms of only one of them.

At first our use of morphine and Demerol analgesia and nitrous oxide, oxygen, and ether anesthesia was accompanied by a high incidence of fetal asphyxia (table 3). Fetal asphyxia was not observed as frequently when local, pudendal block, and spinal anesthesia were used and oxygen was given to the child via the mother before clamping the cord. This lowered incidence has led us to a greater use of local Procaine infiltration for the episiotomy. Nitrous oxide, oxygen, and ether are reserved for circumstances such as intrauterine death of the fetus and fetal abnormality so that the mothers are not awake and aware of the situation as in "natural childbirth." General anesthesia also may be indicated in difficult forceps deliveries or other operations. Local infiltration is excellent for premature infants, and low spinal anesthesia is satisfactory for breech delivery.

SUMMARY

Quantitative measurements of pain intensity have been made in the first and second stages of labor with the dolorimeter. Several hundred determinations were obtained on 27 patients before analgesia. Early in labor the pains are mild, from 1 to 2 dols in intensity, increasing gradually approximately in proportion to the dilatation of the cervix in centimeters and reaching 8 to 10 dols at the completion of the first stage. In the second stage of labor the pain intensity reaches 10.5 dols due to the dilatation of the vulva and stretching of the perineum.

Many patients were studied during analgesia, which in the first stage reduced uterine activity but did not decrease the rate of cervical dilatation. Analgesics affecting the autonomic nervous system decrease pain intensity in the first stage of labor and do not increase the duration of labor or the incidence of prolonged labors.

During the second stage pain sensation is carried by the somatic sensory fibers of the pudendal nerves and can be controlled by local infiltration, pudendal block, and spinal and general anesthesia.

The causes of pain in labor, namely, dilatation of the cervix and vulva, and the patient's reaction to pain as well as to the methods of pain control are described. The neurophysiology of the organs of parturition is so complex that no single analgesic or anesthetic agent or method is ideal. Instead, a combination of drugs and techniques is necessary for the best results in a given situation, thus taxing the physician's versatility to the utmost. The average patient can be well sedated in the first stage by morphine and Demerol, which may be repeated perhaps. Then delivery may be accomplished under local infiltration for the episiotomy in order to avoid asphyxia in the newborn, which occurs more frequently when nitrous oxide, oxygen, and ether are given in the second stage. Such a regimen is simple, can be employed by the physician without assistance, provides all of the advantages of "natural childbirth" without the discomfort, and approaches the "ideal" method of analgesia and anesthesia in obstetrics.

Several patients studied in "natural childbirth" were observed to have the same degree of pain as patients not similarly prepared.

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LOW BACK PAIN

II. Urologic Aspects

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EXCEPT for those due to arthritic changes resulting from prostatic infections and myofascitis, all back pains of urologic origin are referred pains. The presenting symptoms from renal calculous, perinephritic abscess, and hydronephrosis may be backache or pain from the patient's standpoint, but there is usually some other symptom or finding to put the physician promptly on the right track.

The back pain which I propose to discuss is that in which physical examination shows no local tenderness or signs. The patient points out the site of pain at any point from the costovertebral angles down to the sacrum but says that it is too deep to put a finger on. Some patients may complain of dull dragging pain in the hips and thighs and complete exhaustion at the end of the day; they do not want to go dancing or to the movies but only want to get to bed. Most commonly they say that the pain is present on awaking, but after they are up for awhile, it improves or disappears. To the urologist, this complaint points to prostatic and/or vesicular disease—in the male—in the young and middle aged, congestion or infection and in the aged, possibly carcinoma of the gland. In the female, if a pelvic examination shows the uterus to be normal in size, and freely movable with no masses evident, the urethra is immediately suspect. Powell found 179 backaches in a series of 603 women with a pathologic condition in the urethra, and 80 per cent were relieved by treating that condition. Morris found that 31 per cent of 3,600 urologic patients complained of backache or back pain, among them 507 men and 620 women.

SYMPTOMS

Although backache or pain is the presenting symptom, a few questions by the physician may elicit the existence of other symptoms which will tend to confirm the suspicion of prostatic disease in a man. A urethral discharge may be or may have been present; frequent urination may or may not be present; nocturia is seldom evident. Sexual irregularities which the patient does not realize are significant may be revealed by questioning. The patient may be having poor erections or ejaculating prematurely, and orgasm may be painful. There may be distant focal pains in addition, such as pains in the shoulder joints and knees.

Women are so accustomed to backache that as a rule they do not report to the urologist unless they believe their kidneys to be the source of trouble or unless the referring physician, observing no symptoms indicative of pelvic disease, suspects the urethra. Usually they complain of frequency of urination, sometimes as often as every thirty minutes, and terminal pain, possibly with terminal hematuria. They will readily admit a chronic backache which has bothered them for as long as they can remember.

Theories explaining the production of backpain in men from prostatic or vesicular disease are many. I shall attempt to point out only how this type of back pain can be recognized and treated.

Chronic prostatitis is not commonly the result of gonorrhea and often is present before a gonorrheal infection. Infection of the gland from distant foci such as teeth, tonsils, and sinuses will not clear until these foci have been removed. When foci cannot be found in the husband, infection of the uterine cervix in the wife may be the contributing cause. Approximately 80 per cent of men older than 40 years suffer from a chronically infected prostate, and every patient with back pain should have an examination of the prostate and vesicles. Invariably the patient attributes back pain to some strain or injury dating from immediately before the pain began to six months previously, particularly in cases of insurance compensation.

Examination of the prostate may show it to be of normal size and consistency and the secretion to contain little or no pus. However, no prostate should be

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pronounced normal without examinations and treatment at least on three occasions consisting of passage of urethral sounds into the bladder, the instillation of .25 to 1.0 per cent solution of silver nitrate into the prostatic portion of the urethra, and massage of the gland. The reason is that at the first examination secretion from the normal portion of the gland is expressed, whereas the infected portion will not drain because the prostatic ducts are plugged with pus or closed by congestion, edema, or fibrosis. The treatment just described usually will cause the gland to drain properly.

Another reason for repeated examination and treatment is that the infection may be so deep seated that at first it does not communicate with a duct that leads to the urethra. Glands from which no secretion can be expressed always are infected and possibly have been infected for so long that the secreting portion of the gland has been replaced almost entirely by fibrous tissue. This type of gland though normal in size is much more dangerous than the gland which is big, soft, boggy, and easily drained. In the former condition the toxins are being absorbed, whereas in the latter they drain instead.

EXAMINATION AND TREATMENT

Apparently few doctors know how to examine or massage a prostate. Patients describe as a "prostate tickler" the examiner who only inserts the finger through the sphincter for a moment and never touches the gland. For proper treatment the finger should be slowly and carefully introduced to its full length and the area above the prostate where the vesicles lie first should be palpated. A normal vesicle cannot be felt; consequently, if the vesicle is felt, it either is infected or is not draining properly, possibly because of edema, infection, or scar tissue in the ejaculatory ducts. When the vesicles have been examined satisfactorily, the prostate should be massaged gently and firmly from the lateral borders toward the midline. The final strokes should be down the midline over the prostatic ducts causing the secretion to empty into the urethra and appear at the meatus. Even though the massage is gently and properly done, it is not uncommon for men to faint afterwards, probably as the result of a toxin rather than of psychic shock. The blood pressure has been noted to fall during examination of an infected gland, whereas it tends to rise while a normal one is being examined.

Massage and treatment performed twice weekly for a period of from six weeks to three months will clear up the majority of cases; however, some patients must be treated occasionally for years in order to control the infection. The back pain usually clears as soon as the first examination is finished. It may recur in a few days and when the next treatment is due may be as bad or worse than before the first treatment. However, this phenomenon is a good indication that the source of the trouble has been located.

In the female the urethra may become infected by fecal matter shortly after birth. However, sexual intercourse, childbirth, and, as with prostatitis in the male, infection from distant foci also are probable causes. As the proximal portion of the female urethra is homologous to the prostate, symptoms in women which are referable to the urethra are similar to those in men referable to the prostate. Many women do not mention back pain as one of their symptoms until questioned.

CASE 1.—A woman aged 25 complained of pain in the "right side and back," but her chief complaint was terminal hematuria. Questioning revealed that she had suffered from back pain, which she thought was normal for women. She had slept on a board, had worn a brace, and had taken Doan's kidney pills seeking relief. The pain had been so severe that she had dreamed her back was broken.

Complete study revealed only an acute flareup of a chronic urethritis. After a few dilatations of the urethra, she was relieved of the hematuria and back pain. Subsequently she became pregnant.

Cystoscopy is necessary to diagnose disease of the female urethra. The urethra may be narrower than normal and thus give one clue, but in addition to strictures, examination of the bladder and urethra may show inflammation, congestion of the urethral mucosa and in many cases polypoid masses so well described by Folsom in 1931. As mentioned previously, women usually complain of symptoms of frequency and urgency of urination, terminal pain, and hematuria. However, it usually is observed that backache or back pain is the chief symptom overshadowed for the moment by other more acute symptoms.

Dilatation of the urethra once or twice weekly with an instrument no larger than a 34 French sound is usually all that is needed for relief of back pain referable to the urethra. Occasionally destruction of polyps is necessary but only rarely so for the relief of the backache.

To the urologist case reports of prostatitis associated with back pain such as the three which follow are common, although to the general practitioner they may sound exaggerated.

CASE 2.—C. V. C. with a history of chronic prostatitis complained of back pain so severe that he could get out of his chair only with great difficulty. He had been under the care of an eminent orthopedic surgeon and had taken exercises, worn a brace, and slept on a board with only partial relief. He remembered that he had had back pain many years previously when he had been under treatment for prostatic trouble.

At examination the patient hardly could lean over the table. After the prostate and vesicles were gently emptied of a large quantity of debris, he carefully straightened up as if fearful that he would break in two and announced that the back pain was gone. It recurred in a few days; however, at the next treatment, the patient had no difficulty in get-

ting out of his chair. Though greatly improved by treatment of the prostatitis, he undoubtedly had an orthopedic problem as well.

When a patient with prostatitis complaining of backache does not show prompt response to treatment, he should be referred to an orthopedic or neurologic surgeon as other disease also may be present. From the urologic standpoint, the patient with back pain but no local tenderness to pressure, has a prostatic or vesicular infection in three out of four cases.

CASE 3.—A. H., aged 26, was seen in consultation because of continual back pain which would not clear with treatment. He gave a history of injury to his right side and back.

Pus was found in the urine and a complete urologic study was requested to rule out injury to the kidney. The patient's prostate was enlarged, soft, and boggy and the secretion was loaded with pus. Bilateral pyelograms showed a normal left kidney and a grade one dilation of the right renal pelvis; with the patient in standing position, the kidney dropped enough to cause a slight "S" in the ureter. Although this kink was not significant, I advised the insurance company to settle with the patient as no jury would believe that his back pain was caused by an infected prostate if the pyelogram were shown. The patient was informed that the back pain had not resulted from his injury but that the prostatic infection was entirely responsible; his orthopedist agreed in this opinion. The patient glared and said nothing. Six weeks later he announced that the insurance company had settled and that he wanted to start treatment for the prostatitis.

Any man more than 60 years of age who complains of back pain with bilateral sciatica, especially when accompanied by urgency of urination, has a carcinoma of the prostate. Roentgenography of the pelvis and rectal palpation usually confirms this diagnosis. It is often difficult to diagnose carcinoma of the prostate, but in this older age group, a roentgenogram often shows metastic involvement of the pelvis and sacrum. Many times the administration of diethylstilbesterol of 5 mg. daily or bilateral orchidectomy will relieve this type of back pain within twenty-four hours.

CASE 4.—D. L. C., aged 28, had been a prisoner of war in Germany for one year. Upon returning home, he was partially impotent and was about to lose his wife. Observed to have the usual chronic congestion of the gland seen in so many soldiers who had had overseas duty, he was completely relieved after a few months of treatment and had been discharged.

Recently the patient returned complaining of back pain in the lumbo-sacral region which he attributed to playing strenuous softball when he was getting too old for such exercise. However, he recalled that the pain was similar to that which he had had upon return from overseas. Examination showed the prostate to be only slightly enlarged and indurated, but both vesicles were as large as the first joint of a man's little finger. They were stripped easily and his backache disappeared for two weeks. The vesicles were much smaller three weeks later when he returned for treatment; however, he reported recurrence of pain the week before. His vesicles now can be barely felt; he has had no more back pain; and he plays with a championship softball team.

CONCLUSIONS

No man with pain in the back which ranges from the costovertebral angle to the buttocks should be denied a prostatic examination by a skilled examiner. A prostate should not be reported free of disease without at least three examinations. If no secretion is obtained by prostatic massage, either disease is present or the examination was not done properly.

Back pain after trauma or accident is not necessarily a result of such trauma. Pus in the prostatic secretion does not have to cause backache; tension on the prostatic capsule as a result of congestion from ungratified sexual desire may cause the same symptoms.

All back pains or aches are not referred pains of urologic origin but the possibility must be kept in mind. In the female if disease is not present in the pelvis, it must be remembered that the urethra is homologous to the prostate.

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Deaths from Burns Decrease

Forty years ago the loss of life through scalds or burns was seven times as high as it is today, according to studies of the Metropolitan Life Insurance Company. Furthermore, even as recently as from 1936 to 1940 the average death rate was double last year's rate. Improvement is due largely to modernization of the American home with its improved heating, cooking, and lighting facilities.

"The trend reflects in some measure the effect of consistent and widespread education for safety, and the marked advances which medical science has made in the treatment of severe burns," declares a company official. "But most important has been the passing of the old fashioned coal or wood stove, the kerosene lamp, and other hazards of past years."

Burns and scalds still claim about 4,600 lives yearly in the United States, and many additional thousands suffer serious and disfiguring injuries which do not prove fatal, statisticians report. Among adults, burns from stoves and grates, the explosion of flammable liquids, and careless smoking are the most frequent causes of fatalities. For young children scalds from hot liquids and steam are the most prevalent causes, whereas among children somewhat older, burns from stoves and grates, the explosion of flammable liquids, and playing with matches exact the highest toll.

LOW BACK PAIN
III. Neurologic Aspects

CASEY E. PATTERSON, M.D., Dallas, Texas

THE three common causes of back pains presenting neurologic changes are (1) extradural or intradural tumors of the spinal canal, (2) ruptured intervertebral disks, and (3) compression fractures of the spine with pressure or injury to the cord or nerve roots.

Diagnosis of the neurologic cause for back pain depends on a careful neurologic examination, one or more spinal punctures, Pantopaque myelography, and surgery. The history must describe carefully the type of injury, the immediate or progressive change of the symptoms and signs, and especially the change in bladder and/or bowel dysfunction. Also, it must include any evidence as to whether infection was present at any time and must detail carefully any return of function to the injured parts.

The neurologic examination must include the following:

1. Reflex changes should be noted as follows: the equality or inequality of the abdominal, knee, and ankle reflexes; the presence or absence of a Babinski, Gordon, or Oppenheim sign; the presence or absence of ankle clonus and whether it is sustained if present.

2. Sensory changes should be determined by carefully outlining by pin prick, cotton, heat, and cold, the dermatomes or nerve roots involved and by ascertaining if the involvement is unilateral or bilateral over the back, saddle, abdomen, thighs, calves, and feet. Unilateral changes usually are observed in ruptured disks; bilateral changes, in tumors and compression injuries.

3. Muscle changes are manifested by atrophy, weakness, or paralysis of individual or groups of muscles; it should be noted whether these changes are unilateral or bilateral. These too are unilateral in ruptured disks and likely are bilateral in tumors and compression injuries.

4. Vibratory and position sense changes often are seen in compression fractures or tumors of the cord. They may be unilateral but mostly are bilateral.

The results of a careful spinal puncture are extremely important and must include:

1. The spinal fluid pressure.

2. The Queckenstedt test; a positive test indicates a block.

3. The laboratory report on the spinal fluid, including the protein content, Wassermann and colloidal gold response, and cell count. The protein content is usually high (more than 40 mg.) if a block results from a spinal cord tumor or compression injury; it is normal in ruptured intervertebral disks. The other tests prove or disprove infections.

Pantopaque myelographic studies should absolutely prove the diagnosis and carefully localize the lesion. From 3 to 5 cc. of Pantopaque oil is injected into the spinal canal. Under direct fluoroscopic examination the table is tilted up and down while the oil is observed to flow up and down the canal, and spot films of the interspaces, especially the second, third, fourth, and fifth lumbar interspaces in suspected ruptured intervertebral disks, and spot films of defects, as actually seen in tumors, are taken. The area involved may be marked with methylene blue injected into the skin at the area showing the defect. By doing this, definitive surgery then can be done.

As definitely proved, neurosurgical diseases may be diagnosed by the previously described procedures, then surgery to relieve the condition is indicated. I believe that all tumors, unless metastatic, should be resected. Patients with compression fractures who have increasing neurologic signs and symptoms, especially with a block as shown by the Queckenstedt test, should have laminectomies. Those who have ruptured intervertebral disks with pain that is not relieved in a reasonable time by conservative means and in whom the diagnosis is proved by myelography should be operated upon.

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729 Medical Arts Building, Dallas 1.

Longevity and Mother's Age

That the longevity of children of young mothers is greater than those of older mothers has been suggested by experiments with rotifers, minute aquatic animals. This theory has gained recent support in studies of vital statistics by Eeva Jalavisto, a physiologist at the University of Helsinki. In examining the birth and death records of 18,000 Swedes and Finns born between 1600 and 1850 she found that children born to mothers of 24 years of age or younger lived six or seven years longer on the average than those born of women 40 years of age or older. However, she noted no correlation between longevity and the father's age.

Dr. Jalavisto's studies bore out the fact that heredity influences longevity and that long-lived mothers tended to have long-lived children. As to the correlation between life expectancy and the mother's age at birth, however, she believes that some factor in the aging mother is responsible for shortening the lives of late children.—Scient. Am., September, 1950.

DIAGNOSTIC AND THERAPEUTIC NERVE BLOCK

ROBERT C. L. ROBERTSON, M.D., Houston, Texas

THE introduction of the hollow needle was a fundamental advance in medicine and surgery. Only a small number of the uses of this instrument will be discussed, and only the most common and most beneficial of those uses related to the nervous structures will be dealt with.

Needles are made of different metals in many lengths and diameters with several pitches of bevel. In considering needles to reach anatomically specific points at significant depth, all properties should be weighed prior to use. The course of a rigid needle can be more easily controlled. The bevel is important in other respects. The accuracy of reaching an objective of some depth can be influenced by the direction in which the bevel is turned. In dense structures to some extent the needle will tend to wander or gain in the direction opposite the one in which the bevel faces. These and other features of the needle should be evaluated.

A certain minimal knowledge of anatomy is prerequisite to effective injection of neural structures, although in most cases placing the needle tip in fairly close proximity to the structure will produce from fair to good information or results.

The uses of nerve blocks are two: (1) to produce transient results and (2) to destroy locally the structure and produce long-lasting results. Novocain or similar drugs are used in the first category, and almost invariably such injections are for informational purposes. These agents sometimes are given in media which are slowly absorbed, thus prolonging the effect. Absolute or 95 per cent alcohol or phenol also will prolong the effect. In certain circumstances this type of injection not only provides desired diagnostic information but also may enter and break a vicious circle, thereby providing permanent relief.

Cranial nerves, with the exception of the fifth and rarely the seventh, are not good candidates for injection. Trigeminal neuralgia is the most common type but less and less frequently is an indication for nerve block. The second and third divisions of the trigeminal nerve may be blocked as they emerge from the base of the skull; however, the first division cannot be injected at this point unless gasserian ganglion injection, an extremely hazardous undertaking, is attempted. More peripherally major branches of all divisions of the trigeminal nerve are accessible but in no case will the entire division be affected by the injection; hence, only partial relief may be produced. The supraorbital nerve may be injected at the supraorbital notch, the infraorbital nerve through the infraorbital notch, and the inferior alveolar nerve through the mental foramen.

Injection of the primary divisions of the trigeminal nerve at the base of the skull is rarely indicated in modern surgery. It is an extremely painful procedure since it must be done under local anesthesia. Not infrequently attempts to block the nerve fail in expert hands because of anatomic irregularities. Even if nerve block is successful, subsequent injection produces shorter periods of relief; usually no relief is produced after the third attempt. The problem eventuates in a surgical section. It would appear more reasonable to section the nerve as a primary procedure. However, because of poor surgical risk or doubtful accuracy of diagnosis injecting the trigeminal nerve may be indicated instead. Age, as such, is no contraindication to surgery. Practically all neurosurgeons have operated upon at least one very old patient.

The seventh cranial or facial nerve rarely requires Novocain or alcohol injections for tic. The afflictions mostly are of psychogenic origin and their cure may be attained through this approach. Some conditions are favorably influenced by partial paralysis of selected peripheral branches of the facial nerves, a delicate procedure.

Peripheral nerves are blocked for diagnostic information on occasion and for therapeutic purposes with alcohol in some circumstances. Intercostal neuralgia arising from any of several causes may be confirmed as segmental pain by Novocain injections. If the diagnosis of segmental pain is proved, alcohol will prolong the effect of the injection. It is advisable to inject no more than two adjacent intercostal nerves because of the danger of producing a painful numbness, a most troublesome paresthesia. Paralysis of intercostal nerves below the seventh will produce significant motor changes in the abdominal wall.

Mixed sensory and motor nerves, which include important nerves in the extremities, should never be injected with alcohol. The sacrifice of function is prohibitive, and other more logical means are available to relieve pain.

Intraspinal injection of Novocain for regional anesthesia is common and well known. Spinal anesthesia may be useful for diagnosis and repeated spinal anes-

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thetics are therapeutic in such rare conditions as Hirschsprung's disease.

Alcohol injected intrathecally in the lumbar region sometimes is useful if there is evidence that pain is distributed to no more than from one to four segments; this is referred to as the Dogliotti procedure. The patient is placed in the lateral recumbent position with supports under him to elevate as high as possible the region to be attacked. Injection by lumbar puncture is made drop by drop in such a manner that the alcohol is layered to come in contact with and be fixed in the posterior root of the spinal nerve. Slow diffusion should produce no general effect, and the patient should not be allowed to move for two hours afterward. The sensory fibers are more susceptible to alcohol than are the motor fibers but not infrequently the latter are affected. Also, incontinence not uncommonly is produced. The Dogliotti procedure usually is reserved for terminal cases, patients who are extremely poor surgical risks, or instances in which incontinence would not alter the outlook or function.

Paraplegia resulting from spinal cord lesions in which virtually complete loss of motor function in the lower extremities and pain in the lumbar and sacral dermatomes occur may be relieved without significant sacrifice by injection of from 5 to 30 cc. of alcohol. Here again, alcohol is slowly injected while the lower part of the spine is elevated. The patient must remain in this relative position for a number of hours after the injection, the length of time depending upon the amount of alcohol required to produce the desired result. This procedure may improve bladder function in paraplegic patients by converting a poor automatic bladder to an autonomous one. Painful flexor spasms in paraplegic patients also may be relieved.

Probably nerve blocks are most effective when directed to the sympathetic nervous system or its branches. In most attacks on the sympathetic nervous system, either through injection or surgery, two main problems confront the physician: pain and circulation. They are often interactive and interdependent.

A detailed knowledge of the sympathetic nervous system is desirable both from the anatomic and physiologic point of view; however, for this presentation it is sufficient to point out the following salient features.

The sympathetic ganglionic chain extends from the base of the skull to the lower end of the spinal column. However, connection of the chain with the spinal cord extends only from the first thoracic ganglia to the second lumbar ganglia inclusive. This is important especially from the surgical point of view because in certain situations a preganglionic sympathectomy with particular efforts to preserve the postganglionic elements is indicated. Preganglionic sympathectomies are designed to remove the connections with the spinal cord but leave intact cell stations in the ganglion and pathways distal to that point. If the postganglionic pathways or ganglion cell itself is removed, all sympathetic influence on the muscles of the walls of the vessels is removed and the muscle within the walls of the vessels becomes sensitive to circulating adrenaline and sympathin. Because of sensitivity to these chemicals the vessels may contract to offset the benefit of a postganglionic procedure, whereas if a preganglionic sympathectomy is done, permanent benefit will result.

The second and third thoracic sympathetic ganglia contain most of the fibers through which sympathetic impulses are mediated to the upper extremity. The second and third lumbar sympathetic ganglia have the same relationship to the lower extremities as the second and third thoracic ganglia to the upper extremities.

The problem of nerve block, with the indications and types of attack available in certain conditions are shown in table 1. A column for surgical attack is provided, since certain conditions which seem to offer no promise with Novocain injections will give

TABLE 1.—*Indications for Nerve Block and Results Obtained from Various Types of Attack.*

Region	Pathologic Condition	Type of Attack†		
		Novocain	Alcohol	Surgery
Superior cervical ganglion	Corneal ulceration after section of trigeminal root	0	0	+
	Atypical head and face pain	0	0	Rare
Stellate ganglia (combined lower cervical and first thoracic ganglia)	Cerebral embolus and thrombus	+ Repeatedly	0	0
	Cerebral hemorrhage, after hemorrhage has subsided	+ Repeatedly	0	0
Upper three thoracic and upper three lumbar ganglia (Postganglionic)*	Angina pectoris, painful aneurysm of aortic arch	+	+	+
	Thrombo-angiitis obliterans with vasoconstriction, if femoral or brachial arteries are patent	+	+	+
	Hyperhidrosis	+	0	+
Second and third thoracic and second and third lumbar ganglia (Preganglionic)*	Raynaud's disease	+	+	+
	Thrombo-angiitis obliterans (advanced)	?	+	+
	Amputation stump pain, especially associated with vasospasm	+	0	+
	Post-traumatic arthritis	+	?	+
	Causalgia with vasoconstriction	+ Repeatedly	+	+
	Injury to major vessel threatening survival of extremity	+	+	+
	Intermittent claudication (even in presence of arteriosclerosis)	?	0	+
	Hyperhidrosis	+	0	+

*Also applies to superior cervical and stellate ganglia.

†Indicates good results may be obtained for testing or therapeutic purposes; 0 indicates poor results or contraindication.

fairly good results with surgery; a long-lasting effect sometimes is necessary before beneficial results become apparent.

Anatomically it is interesting to note that in the cervical region the ganglionic chain lies more anteriorly on the bodies of the vertebrae, then it becomes more lateral to lie on the extreme lateral portion of the body of the vertebra in the upper thoracic region and in the lower part of the thoracic region, and again comes to lie more anteriorly on the body of the vertebra. In the lumbar region the ganglionated chain lies fairly far anteriorly. This anatomic picture should be borne in mind in injection of the chain. It is not necessary actually to strike the ganglion or chain with the needle tip, but it is essential to get in the proper plane so that the drug can diffuse around the ganglion and chain. If the needle is placed in contact with the body of the vertebra with the bevel of the needle directed away from the body when it first strikes the bone, then if the bevel is reversed as the needle is advanced further, the proper plane will be entered. In this connection, particularly in the thoracic region, the drug is likely to be diffused around the intercostal nerve; alcohol may cause sufficient destruction of the intercostal nerve to produce a fairly long-lasting neuralgia. Therefore, if the patient's condition will permit, it is better to remove the nerve surgically rather than to attempt local destruction by alcohol injection. If the patient will not tolerate surgery, a neuralgia of a troublesome character which may result from an alcohol injection must be considered a calculated risk.

SUMMARY

In this paper are considered (1) uses of nerve blocks, (2) anatomy of the nervous system involved, (3) types of attack available, (4) drugs which may be employed, and (5) potential complications.

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ABSTRACT OF DISCUSSION

DR. GEORGE V. LAUNEY, Dallas: I believe that the procedures which Dr. Robertson so ably describes should be limited to the specialist in neurosurgery. Many conditions fall within the scope of the general practitioner who is interested in this subject. However, a thorough knowledge of anatomy is essential if good results from treatment are to be expected, and alcohol injections and surgical procedures should be restricted to the specialist.

The pain caused by fractured ribs, herpes zoster, and intercostal neuralgia often can be completely controlled by injecting the intercostal nerves with Novocain or Intracaine in oil. This procedure rarely has to be repeated more than two or three times. It also makes unnecessary taping the chest, which is uncomfortable and which in severe chest injuries predisposes to pneumonia and atelectasis.

Another condition in which I find local anesthesia of particular value is coccygodynia. If injecting the coccyx segments completely relieves the pain, the diagnosis is established. These patients after injection sometimes are completely relieved of symptoms for three or four days, and often three or four injections at intervals of several days will permanently relieve them. However, if symptoms are completely relieved after each injection but continue to return, good results may be expected from surgical excision of the segments.

Also, blocking of the lumbar sympathetic ganglia with Novocain is of great value in thrombophlebitis. I have seen dramatic results when this procedure is done early in the course of the disease.

A solution of .5 per cent Novocain is ample in injecting nerves and other structures. I have reduced fractures, amputated fingers, and accomplished numerous other office procedures with a solution no stronger. The secret is to allow ample time for anesthesia after injection of the solution.

Cancer from Colds and Chickenpox?

Childhood's colds and chickenpox may plant the seed of maturity's cancer, Dr. Francisco Duran-Reynals of Yale has suggested, according to the November issue of *Texas Cancer Triangle*. Dr. Duran-Reynals says that the viruses causing such mild diseases may lie dormant in the body for years, then something may happen to cause them to blaze up into a new activity—cancer.

The scientist developed his theory from experiments on young chickens painted with the cancer-causing chemical, methycholanthrene, which produced tiny yellow sores that proved to be fowl pox. Extracts from these sores injected into other chickens produced more fowl pox. The painted chickens developed worse skin troubles as they grew older. Injected with the male sex hormone testosterone, many of them developed cancer within fifteen days. And yet, extracts from these cancers caused fowl pox—and not cancer—in other chickens.

Hand Talking for Aphasic Patients

A hand talking system has been devised for aphasic patients and has been incorporated in a chart by Dr. Hamilton Cameron, New York, a former victim of aphasia. By Dr. Cameron's method patients using only one hand can make their wishes and basic needs known in a simple hand-sign language. Physicians wishing further information or desiring copies of Dr. Cameron's chart may write him at 601 West 110th Street, New York 25.

RESTAURANT SANITATION PROGRAM

Sanitation in restaurants is being enforced by the Texas Restaurant Association in cooperation with local city health officers and in accordance with the sanitation standards of the United States Public Health Service.

For more than six months each restaurant seeking membership in the Restaurant Association has been required to pass such inspection, and in that time several large "name" restaurants as well as small ones have been refused admission. Last fall each of the 1,448 members was to submit to inspection by health officials to determine whether or not they meet Public Health Service standards and thus are eligible to retain membership in the Texas Restaurant Association. If the restaurant owner does not pass, he will be requested to bring his place up to the standards; if a recheck proves that he has failed, he will be asked to withdraw from the association.

DIAGNOSIS OF UPPER ABDOMINAL PAIN

MAVIS P. KELSEY, M.D., Houston, Texas

THE diagnosis of pain in the upper part of the abdomen is complicated because of the many sources of pain: the abdominal viscera, the kidneys, the chest contents, the musculoskeletal system, and the nervous system; it also may result from systemic disease. An understanding of the characteristics of a pain according to its origin and nervous pathways is helpful in diagnosing its cause. The types of pain may be arbitrarily grouped as follows: (1) somatic, (2) visceral, (3) referred, and (4) neurologic. In this brief discussion only the most common diseases causing pain in the upper part of the abdomen can be emphasized.

TYPES OF PAIN

Somatic pain arises from stimulation of somatic nerve endings and is caused by traction on mesenteries, peritoneal irritation, and musculoskeletal disturbances. The fifth to twelfth thoracic nerve segments supply the upper portion of the abdomen. Somatic pains are usually sharp, are well localized in the diseased structure, and may be superficial or deep.

Visceral pain arises from stimulation of autonomic nerve endings. The causes are distention or spasm of the viscera, local noxious stimulation of engorged or inflamed mucosa, and ischemia. The belief that stretching or spasm of tubular structures is the only source for visceral pain now seems erroneous. This error arose because stimuli painful to the skin failed to produce pain when applied to normal viscera. Wolff and Wolf[6] have shown that pinching, pricking, or electrical stimulation of the mucous membrane of a turgid hyperemic stomach, colon, or bladder gives rise to pain.

Visceral pain in the upper part of the abdomen may enter the autonomic nerve chain anywhere from the upper thoracic region, as in coronary insufficiency, to the upper lumbar region, as in renal colic. True visceral pain is usually poorly localized, is confined to the midline, and is deep, dull, and a steady ache or cramp. However, it is of special interest that the burning pain ordinarily associated with noxious stimulation of the skin can arise from the upper gastrointestinal tract in peptic ulcer.

Referred pain arises by spread of a nervous excitation to other parts of the same nerve segment or to segments adjacent to those in which a painful stimulation occurs. The pain may be felt on the body surface or in some other part distant to the diseased structure. Referred pain usually is associated with hyperalgesia of the skin of the involved nerve segment and with motor effects (spasm, reflex position, and splinting) which are also refer phenomena. Referred pain may be the first symptom arising from a disease. Injection of Procaine into the site of origin will relieve the referred pain, whereas injection of Procaine into the region of referred pain will not reduce the intensity of the pain but will reduce hyperalgesia and hyperesthesia, thus giving some relief.

Neurologic pain arises from primary diseases of the peripheral nerves, sensory nerve roots, and spinothalamic tracts of the spinal cord. It is usually segmental in distribution and may be deep or superficial. The pain is often sharp, burning, or severe.

DISEASES OF ABDOMINAL VISCERA

Duodenal Ulcer.—Patients with duodenal ulcer may complain of gnawing, burning, aching, or hunger pain well localized to a small area near the midline of the epigastrium. Less commonly the pain may be referred and felt in the region of the midthoracic spine, the right lower or right upper abdominal quadrants, or substernally. It is usually mild but may be of crisis-like severity in the hypersensitive individual or completely absent in the stoic, whose ulcer first may be manifested by hemorrhage or perforation. The pain occurs periodically from one-half to four hours after eating, usually about two hours. It often appears between midnight and 3 a. m. but rarely after arising before breakfast. In chronic duodenal ulcer the symptoms are almost invariably periodic, occurring with clocklike regularity for several days or weeks, then disappearing completely regardless of treatment for several days to many months. Recurrences are most prevalent in spring and fall and may be precipitated by tension, fatigue, infection, and dietary indiscretion. Pain is relieved so promptly by food and antacids that immediate remission of symptoms after therapy is diagnostically significant. Dyspepsia, anorexia, nausea, and vomiting are not prominent symptoms in patients with uncomplicated duodenal ulcer. Irritable bowel is often a concurrent finding.

A change in symptoms suggests a complication such as penetration, hemorrhage, or obstruction. The onset of protracted and severe abdominal pain, boardlike rigidity, and vomiting in a patient with a history of duodenal ulcer, or rarely without such a history, is characteristic of perforated duodenal ulcer. Roentgenographic demonstration of gas under the diaphragm is diagnostic.

Duodenal ulcer may occur at any age but is ex-

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tremely common between the ages of 20 and 50 years. It is four times more common in men than in women. Physical examination reveals localized tenderness in the epigastrium. Gastric analysis invariably shows free acidity, usually in excess of normal. Many duodenal ulcers are easily diagnosed by roentgenography but a great number are discernible only by the most capable roentgenologist.

Gastric ulcer is clinically similar to duodenal ulcer but is only one-tenth as common. Its differentiation from gastric carcinoma is a well recognized problem.

Gastric Carcinoma.—Unfortunately, gastric carcinoma rarely produces symptoms during the early or curable stage. Only later come the symptoms of epigastric discomfort, belching, fullness, burning, or cramping which often appear soon after a meal. Nevertheless, patients occasionally have symptoms typical of peptic ulcer or a history of many years of dyspepsia. Mild symptoms, particularly intolerance to meats and roughage, often cause the patient to reduce his diet gradually for several months, thus relieving symptoms but delaying the diagnosis.

I believe that any patient older than 40 who complains of dyspepsia should have a roentgenographic study of the stomach to rule out carcinoma. When by roentgenography an ulcerating lesion is observed on the lesser curvature of the stomach above the incisura, the cause is most likely to be peptic ulcer. Ulcerating lesions in the pylorus may be benign or malignant. Lesions on the greater curvature and in the cardia are most likely malignant. A large crater suggests malignancy. The older the patient, the greater the likelihood of malignancy, but only slightly more than half of gastric carcinomas are associated with achlorhydria. Gastroscopy may be helpful occasionally in diagnosis. Since operative mortality is now low, it is my opinion that the routine treatment for gastric ulcer should be prompt surgical exploration and removal of the ulcer. Medical therapy may be tried if the patient is a poor surgical risk, particularly when the roentgenographic evidence favors benign ulcer and achlorhydria is not present; however, if occult blood persists in the stools or roentgenologic evidence of the ulcer persists after three weeks' treatment, surgical exploration should be done when possible.

Diaphragmatic hernias which are of several types usually include the stomach and less frequently the intestines or spleen. The pain is usually mild but occasionally is extremely severe; there may be the sensation of a lump, pressure, burning, or squeezing. The pain is usually at the xiphoid or to the left of the sternum and may radiate to the back or left shoulder. Often it appears immediately after eating or reclining or when intra-abdominal pressure is increased by coughing or straining at stool. Arising to an upright position often relieves the pain. Its severity does not seem to be related to the size of the hernia.

Heart burn, dysphagia, regurgitation of food or gastric juice, bleeding with secondary anemia, dyspnea, reflex paroxysmal tachycardia, and palpitation are frequent symptoms. In general, hernia is much more common in women and in elderly people. With large hernias breath sounds in the lower left part of the chest may be absent and succussion splashes or peristaltic sounds heard instead. Roentgenograms should be taken with the patient horizontal since the hernia often is not seen when the patient is erect. The pain is most often confused with that of coronary disease, cholecystitis, or duodenal ulcer. Electrocardiography after exercise is sometimes helpful in differentiating the pain of true angina pectoris from that of diaphragmatic hernia.

Cholecystitis and Gallstone Colic.—Between attacks of acute pain, there may be epigastric distress, bloating, and belching, usually made worse by fatty foods. Typical attacks may be mild or severe; they often begin as epigastric pain from visceral nervous stimulation but soon localize in the right upper quadrant when peritoneal irritation is present. Often the pain radiates to the right infrascapular region or the tip of the right shoulder; it is occasionally substernal, suggesting coronary disease. The pain occurs suddenly, often at night, and recurs with pattern-like regularity. It is a constant crescendo pain instead of the oft-described intermittent colic and persists several hours unless relieved promptly by a narcotic. The patient perspires or feels chilly and may have a little fever. Nausea and vomiting usually occur. Tenderness and even muscle spasm in the right upper quadrant persist until the next day, when slight jaundice, dark urine, and light colored stools may appear.

The disease is more common in women and is rare in young men. The white blood cell count may be slightly elevated. A scout film may disclose stones. If jaundice is not present, cholecystograms are helpful in establishing the diagnosis.

Other Diseases of Liver and Biliary Tract.—If acute cholecystitis persists with chills, increasing fever, and leukocytosis, the onset of gangrenous cholecystitis should be suspected. Recurrent severe colic, variable jaundice, chills, fever, and mild liver dysfunction suggest the probability of a common duct stone. There is no way to diagnose carcinoma of the gallbladder early enough, but surgical removal of every diseased gallbladder, the site of origin of this carcinoma, should prevent its occurrence.

A progressively severe jaundice with absence of bile in the bowel suggests malignant obstruction of the common duct or hepatitis. A palpably enlarged and dilated gallbladder suggests malignancy (Courvoisier's law). Demonstration of diminished liver function by at least several of the commonly used

tests strongly supports the diagnosis of hepatitis. Unfortunately, the diagnosis is not simple since liver dysfunction appears in prolonged jaundice caused by extrahepatic biliary obstruction. Acute hepatitis with rapid stretching of the liver capsule may cause as much pain as acute cholecystitis, whereas large metastatic nodules in the liver are usually painless.

Pancreatitis may be of four types: (1) acute edematous which is usually benign and self limited, (2) acute hemorrhagic which is dramatic and often fatal, (3) acute suppurative which terminates in abscess or pseudocyst, and (4) chronic relapsing which may produce calcifications visible by roentgenography.[5] Patients with these types of pancreatitis have somewhat similar episodes of epigastric pain, which are usually severe. Sudden or gradual in onset, the pain often occurs in a previously healthy patient. It may involve almost any part of the abdomen, particularly the epigastrium and left upper quadrant, and radiate to the upper lumbar region or anterior portion of the chest. It is described as piercing, crampy, or boring and it becomes progressively worse. Diagnostically important is the protracted severity of pain requiring repeated injections of narcotics and lasting even as long as two or three weeks. Adynamic ileus with vomiting and gaseous distention usually occurs. The abdomen is so tender that coughing or movements cause pain so severe that the patient is likely to flex his spine, hold his arms across his abdomen, and remain motionless. Extensive abdominal rigidity usually is not as boardlike as that of a ruptured viscus.[1] A tender enlarged pancreas is sometimes felt. Ecchymosis around the navel is seen rarely.

Pancreatitis is more prevalent in men and may occur at any age. Obesity, biliary disease, and alcoholism are predisposing factors. There is leukocytosis, occasionally glycosuria, and in the long-standing, chronic, relapsing cases fatty stools.[3] Elevation of serum amylase within the first day of symptoms and of the serum lipase within several days are diagnostic findings. Every hospital in which surgical exploration is undertaken should provide these valuable, yet simple, tests; needless and sometimes fatal operations could thus be avoided. Perforation of a duodenal ulcer may cause an increased serum amylase, probably resulting from spillage of pancreatic amylase from the duodenum with transperitoneal absorption of the enzyme into the circulation.[4]

Carcinoma of Pancreas.—Half of the patients with carcinoma of the pancreas have pain which is usually epigastric or referred to the lumbar region. Jaundice and palpable enlargement of the gallbladder occur when the malignant lesion obstructs the common bile duct. Sometimes the duodenal loop is enlarged or deformed as observed roentgenographically.

Appendicitis.—With congenital nondescent of the cecum the appendix may be in the upper right abdominal quadrant in the region of the gallbladder. In this instance onset of appendiceal pain may be around the umbilicus as usual for visceral pain, but as peritoneal irritation develops, the pain localizes in the right upper quadrant. Regardless of the location of the appendix, reflex pylorospasm also may cause upper abdominal pain. The common age for appendicitis is much lower than for cholecystitis.

Acute Obstruction of Small Bowel.—The pain in this condition usually occurs as recurrent, progressively severe, midabdominal or upper abdominal cramping. Typical of visceral pain, it is dull and poorly localized; it is associated with nausea, vomiting of bile, distention, and increased, high pitched peristaltic sounds. The development of acute tenderness or rigidity and loss of peristalsis suggests that the integrity of the bowel wall has been overcome and that peritonitis has set in. A scout film of the abdomen will disclose characteristic distended loops of small bowel.

Renal Disease.—Diagnosis is usually easy if renal involvement is suspected. The characteristic radiation of pain around the flank, tenderness in the costovertebral angle, a palpable renal mass, the absence of abdominal rigidity, altered renal function, urinary changes, and roentgenologic evidence of enlarged kidney or calculus are helpful diagnostic points.

Functional Pain.—Extremely common and protean in its manifestations and severity, functional or psychogenic pain may simulate nearly every disease. The most important factor in diagnosis is ruling out organic disease. Functional pain usually is seen in anxiety states, neuroses, depressions, and drug addiction. Physical findings and laboratory tests are usually negative.

Several other abdominal diseases which occasionally need to be differentiated are the following: acute food poisoning, epigastric and internal hernias, internal congenital bands, splenic infarct, gastritis, hyperchlorhydria, perforation of a viscus by an ingested foreign body, mesenteric or portal thrombosis, tumors of the small bowel and colon, regional enteritis and ulcerative colitis, Meckel's diverticulitis, benign paroxysmal peritonitis, peritoneal hemorrhage, trauma, diverticulitis coli, irritable colon, and acute salpingitis with secondary peritonitis.

DISEASES OF CHEST

Coronary Artery Disease.—Angina pectoris and myocardial infarction are commonly confused with cholecystitis. Distention of the biliary tract actually has been shown to produce angina pectoris and coronary spasm.[1] Angina pectoris typically is produced by exertion and is relieved by rest. Regardless of its radiation in the arms, neck, or epigastrium, angina pectoris nearly always becomes a constricting pain in

the substernal region and lasts for a few minutes only. Myocardial infarction may occur at rest, is not relieved by nitroglycerine, and lasts for hours with associated weakness and shock. A history of hypertension, an enlarged heart, pericardial friction, and gallop rhythm, when present, are helpful signs. Coronary disease is usually but not always reflected in the electrocardiogram by changes in the S-T segments and the T waves.

Pneumonia of a lower lobe with pleurisy producing pain, tenderness and rigidity of an upper abdominal quadrant has led to many abdominal operations. Chest expansion is limited; friction rub, altered breath sounds, or rales can be elicited; and roentgenograms reveal the pneumonic process.

Pulmonary embolus, primary pleurisy, acute pericarditis, spontaneous pneumothorax, dissecting aortic aneurysm, esophagitis, and esophageal carcinoma may cause pain in the upper abdomen.

MUSCULOSKELETAL DISEASES

Protruded intervertebral disk, scoliosis, spondylitis or osteo-arthritis of the spine, and tuberculosis or metastasis in the vertebrae or ribs may cause referred pain felt principally in the upper portion of the abdomen. Myositis, muscle strains, and injuries may cause pain, tenderness, and rigidity in the upper part of the abdomen. Musculoskeletal pain is increased by motion. Tenderness of the abdomen to deep palpation is lessened by holding the abdominal muscles rigid if the cause is visceral disease; the tenderness remains unchanged by this maneuver if the cause is muscular tenderness.

DISEASES OF NEUROLOGIC ORIGIN

Herpes Zoster.—This pain follows closely the segmental distribution of the nerves and is felt more in the back and side than in the midline of the abdomen. It is a burning, sticking, sharp, superficial pain associated with marked hyperesthesia. The characteristic eruption may not appear until three days after the onset of pain. The eruption may be followed by many months of painful postherpetic neuralgia.

Tabetic crises may be so confused with a perforated peptic ulcer that surgical exploration is necessary. Characteristically, the pains of tabes dorsalis are lightning-like, last only a fraction of a second, but may occur repeatedly and encircle half or all of the abdomen. The Argyll-Robertson pupil sign, a positive Romberg sign, absence of the knee-jerk reflex, absence of true abdominal rigidity, absence of leukocytosis, and positive flocculation of the spinal fluid for syphilis are important diagnostic signs.

Tumors within or compressing the spinal cord; traumatic lesions of cord and meninges; infectious or toxic meningitis, myelitis, or neuronitis; abdominal neuralgia; abdominal epilepsy; and migraine are other neurologic disturbances causing upper abdominal pain.

SYSTEMIC DISEASES

Diabetic Acidosis.—Acidosis with severe abdominal pains can be the first clinical manifestation of diabetes, a good reason for routine urinalyses on patients with abdominal pain. If pain and tenderness do not subside four hours after treatment of the acidosis, some cause for the pain other than diabetes should be sought.

Several other systemic diseases may produce severe acute abdominal pain suggesting surgical lesions. These include lead colic, acute porphyria, periarteritis nodosa, scleroderma, allergy, and the bite of the black widow spider.

SUMMARY

In the diagnosis of abdominal pain a careful history of both the acute episode and previous events, a complete physical examination, and a few standard laboratory procedures will save many patients from needless surgery. Although surgical intervention as a result of misdiagnosis is to be discouraged, exploration is a justifiable diagnostic procedure which often is delayed until it is too late to save the patient.

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ABSTRACT OF DISCUSSION

DR. WILL S. HORN, Fort Worth: Dr. Kelsey's review should stimulate anew the interest of physicians in a more exacting evaluation of the various diseases and conditions whose symptomatology includes discomforts and localization of pain in the upper part of the abdomen.

The diagnosis carcinoma of the pancreas in the pre-icteric stage should be strongly suspected in older adults with vague dyspeptic symptoms and aching pain referred from the left upper quadrant into the left costovertebral angle. The tendency to looseness or occasional episodes of diarrhea with progressive loss of weight and declining strength should add supporting evidence. Under such circumstances, surgical exploration should be advised. Thus, surgical cure of early pancreatic malignancy may be hoped for even though the chances of success may be limited.

Although coronary occlusion was unrecognized clinically prior to 1912, when Herrick first reported the antemortem recognition of myocardial infarction, the diagnosis today is made by the general practitioner with such a high degree of accuracy that "acute indigestion" as a cause of death has prac-

tically disappeared from statistical records. And yet, there is still the challenge of possible error in such conditions as dissecting aortic aneurism, acute pancreatitis, properitoneal hernia, cholecystic disease, and even biliary dyskinesia. I have records of no less than 12 instances in which myocardial infarction occurred concurrently with active duodenal or gastric ulcer; in some instances the ulcer syndrome was the presenting complaint, while in others the coronary symptoms were primary. The literature contains a number of similar reports.

While the patient with acute upper abdominal pain presents a dramatic picture that requires prompt decision and immediate action, the one with a chronic complaint may offer a much more difficult diagnostic problem. Under such circumstances immediate diagnostic studies should include a search for disease of pulmonary, pleural, or cardiac origin, disorders of renal origin, and disorders of hepatic, cholecystic, pancreatic, and gastrointestinal nature. Of course, it should not be forgotten that upper abdominal pain also may arise from disease in the vertebral column, the spinal cord, and the regional peripheral nerves.

There probably is no broader nor a more challenging field in somatic diagnosis than the epigastric region; at the same time in no other area may emotiogenic symptoms so completely confuse the picture. The challenge of such confusion of symptoms should sharpen the physician's clinical judgment and improve his diagnostic acumen.

HEMATURIA: ITS SIGNIFICANCE AND MANAGEMENT

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THE word "significance" has two connotations as applied to the subject of hematuria, namely: (1) what disease process does the hematuria indicate and (2) how important is blood in the urine in any given patient? In other words, how seriously should this symptom be taken? In this paper a practical approach will be undertaken, rather than a stereotyped listing for the sake of completeness of all possible causes of blood in the urine.

The fundamental facts that the general practitioner should at all times remember about hematuria are as follows:

1. Hematuria is a symptom of underlying disease and is not an entity in itself.

2. Hematuria may be caused by almost any lesion in any organ of the genitourinary system and in addition may accompany certain systemic disorders.

3. Gross blood is usually the earliest symptom and often is the only indication of cancer of the bladder or kidney.

In view of these facts, it follows that in the management of hematuria the responsible physician should invariably insist on immediate and adequate urologic study which should be repeated as necessary until the cause of the bleeding is ascertained. Usually cystoscopic and pyelographic examination are required. Since the inconvenience and expense of a complete urologic study is not negligible, the possibility of the disclosure of a cancer or other pathologic condition in an early stage when a cure can be effected should be emphasized. Furthermore, the value and satisfaction to be gained from an examination with negative results or the discovery of only minor disease should be stressed. When these possibilities have been frankly presented by a medical adviser who has the patient's confidence, the patient will almost invariably submit to what is in his own best interest. Failure to make a complete urologic examination may jeopardize the patient's health, if not his life.

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Read before the Section on General Practice, State Medical Association of Texas, Annual Session, Fort Worth, May 2, 1950.

HISTORY AND PHYSICAL EXAMINATION

While usually cystoscopy and roentgenographic studies are necessary in properly diagnosing hematuria, much can be learned from the history and physical examination. The circumstance of onset; the presence or absence of associated renal colic (suggesting stone); or of frequency, dysuria, and fever (suggesting infection) should be ascertained. Of particular importance is the character of the bleeding—whether initial, terminal, or total. Initial bleeding followed by clear urine localizes the lesion to the urethra, whereas the passage of blood at the end of micturition suggests a pathologic lesion of the bladder neck or posterior urethra. Bloody urine throughout voiding points to the kidney or bladder proper. The color of the blood (bright or dark) and the presence of clots, particularly "worm-like" clots which are ureteral casts and which suggest bleeding from the kidney, should be noted. The typical finding in cancer is gross, total, painless hematuria but variations of this pattern are frequent.

In the antecedent history previous similar attacks, the passage of calculi, recent acute respiratory infections, and the ingestion of medicine (Dicumarol and sulfonamides) are of importance. A history of any recent trauma to the kidney or bladder should be noted. Furthermore, the possibility of systemic disease, such as familial bleeding tendencies, frequent nose bleeds, easy bruising, and high blood pressure, must be investigated.

In addition to the usual routine the physical examination should focus on palpation of the renal areas for masses or tenderness, palpation and percussion

over the suprapubic area, inspection of the urethral meatus, and a digital examination of the rectum to determine the status of the prostate. Observation of the patient while he urinates and inspection of the urine which has been voided into two glasses should conclude the physical examination.

UROLOGIC EXAMINATION

On completion of the history and physical examination the physician may be able to make a presumptive diagnosis or the cause of the bleeding may still be indeterminate. In any case, unless the cause is obvious cystoscopy and pyelograms should be done, preferably while the patient is bleeding. It is at this point in the diagnosis that the general practitioner may err in giving chemotherapy more or less as a therapeutic test. Admittedly, many cases of hematuria are on an infectious basis, such as acute hemorrhagic cystitis, and will respond to drug treatment; however, the danger is that the bleeding may be due to a cancer which will progress to an inoperable stage unless complete and immediate urologic studies are done. The tendency of genitourinary cancer to bleed intermittently is a characteristic well known to physicians; however, the unwary patient may be tricked into the belief that the sulfa pills he took stopped the bleeding, hence that bleeding was merely the result of a "strain" or "irritated bladder" and therefore of no significance.

Cystoscopy with a modern instrument of small caliber is simple and comparatively painless and can be done in the office. Any inconvenience is more than made up for by the great value of localizing the bleeding. A preliminary roentgenogram of the kidney, ureter, and bladder and an intravenous urogram likewise do not incapacitate the patient; indeed, retrograde pyelograms may be judiciously performed with minimal difficulty, requiring little or no hospitalization. Ideally, then, all patients with hematuria should have cystoscopic examination and retrograde pyelograms made while bleeding. Furthermore, if the initial study is inconclusive, the necessity for repeated examinations must be emphasized.

In summary, the principles of the management of the patient with hematuria are these:

1. The practitioner should start with the premise that the bleeding is due to a cancer of the kidney or bladder and that it is up to him to prove it.

2. If cancer is not found, an alternate definite cause of the bleeding should be demonstrated, either within or without the genitourinary tract.

3. If a definite cause is not found, periodic reexaminations should be recommended until the source of the bleeding is determined and the etiology discovered.

4. In carrying out the above plan, the greatest reliance should be placed on a cystoscopic examination and on retrograde pyelograms made while the patient is bleeding.

CAUSES OF HEMATURIA

While it is obviously impossible to discuss all of the causes of hematuria, some illustrative case reports which emphasize pertinent points follow.

CASE 1.—Mrs. T. J. P., 69 years old, had suffered from attacks of "cystitis" for years. One week previous to hospitalization, she had had an attack similar to previous episodes with the additional symptom of gross blood in the urine. Her local physician performed a cystoscopy and saw a growth which on subsequent biopsy proved to be a Grade III cancer. The upper urinary tract was normal, and since the cancer involved only the bladder neck and trigone, a cystectomy was done with a reasonable prospect of cure.

Comment.—Had the bleeding been assumed to be of inflammatory origin and medication given without cystoscopy, the growth would soon have become nonresectable.

CASE 2.—Mrs. W. L. H., a 60 year old woman who had a cancer phobia, was examined during an episode of gross hematuria with minimal bladder symptoms. Cystoscopy showed an acute hemorrhagic cystitis, and Staphylococci were noted on Gram stain of a smear. Pyelograms were normal. The cystitis responded promptly to sulfadiazine.

Comment.—This comparatively minor ailment probably would have responded to chemotherapy without a thorough work-up; however, knowing the cause for the hematuria was gratifying to patient and physician alike.

CASE 3.—Miss C. S., 40 years old, had had pus and blood in the urine on numerous occasions for years without localizing symptoms. She had been treated with sulfonamides and penicillin, but had never had a urologic work-up. Cystoscopy and pyelograms showed a large stone in the left kidney with so much destruction of the renal parenchyma that nephrectomy was necessary.

Comment.—Early investigation would perhaps have permitted removal of the stone before kidney damage had become irreparable.

CASE 4.—A. G. E., a middle aged man, had had an attack of kidney pain and gross blood in the urine a year previous to admission, and a small stone was passed. He was well for a year and then again passed gross blood. Study showed bleeding of the left kidney, and the pyelograms were diagnostic of a hypernephroma. A nephrectomy was performed and the patient was well four years later.

Comment.—It was anticipated that this patient had a recurrent stone, but complete study showed a cancer which was removed with a fairly good prognosis.

CASE 5.—W. K. R., an elderly man, had mild symptoms of prostatic obstruction and had passed blood on one occasion. In view of the history of hematuria a routine work-up was done revealing an absence of the upper major calyx on the right and indicating a tumor. A nephrectomy was done and a large hypernephroma removed. The patient was well three years later and his prostatic obstruction had responded to conservative therapeutic measures.

Comment.—This man's symptoms were primarily

prostatic. A coincidental kidney tumor was disclosed by a complete urologic examination which was indicated by the hematuria.

CONCLUSION

Hematuria is a symptom, not a disease. Although it may be caused by practically any lesion in any organ in the urinary system, the safest course for both patient and physician is to regard blood in the urine as being due to cancer until proved otherwise by immediate and adequate urologic study.

ABSTRACT OF DISCUSSION

DR. ROBERT J. SIGLER, Corpus Christi: As Dr. Spence has pointed out, hematuria may be a symptom of a comparatively minor complaint or of one which may destroy life if not properly treated. Blood from the urethra, like blood issuing unnaturally from any other body orifice, means trouble to most patients. Bleeding per se should not mean immediate referral to a urologist; care should be taken not to miss a diagnosis of a nonurologic condition as the source of the bleeding. Often, blood from the vagina is mistaken for blood in the urine, and occasionally blood from the anus also may cause confusion. Also, a systemic disease may be diagnosed by the general practitioner as may diseases of contiguous organs, especially the internal female genitalia and the appendix.

However, the general practitioner should not be too hasty in assigning the cause of hematuria and in assuring the patient that there is no cause for alarm. Bleeding is always serious. It is one of the signs widely advertised by the American Cancer Society as a danger signal to the laity. Analysis of the statistics indicates that there has been little decrease in the interval between the onset of symptoms and initial examination and between the initial examination and definitive treatment; lessening these intervals is one of the main hopes in decreasing the cancer death rate. The interval between initial examination and diagnosis or definitive treatment is largely the responsibility of the general practitioner. By following the plan outlined by Dr. Spence in arriving at the cause of hematuria, the general practitioner can give the urologist the best opportunity to cure cancer of the urinary tract.

BILATERAL CORTICAL NECROSIS OF KIDNEYS

Report of Two Cases and Consideration of Pathogenesis

ALICE SMITH, M.D., and E. E. MUIRHEAD, M.D.,
Dallas, Texas

BILATERAL or symmetrical cortical necrosis of the kidneys is a relatively rare lesion but one that is serious since in its recognizable form it resembles a bilateral nephrectomy. The early phases of bilateral cortical necrosis may be indistinguishable in clinical behavior from the common types of acute renal failure, such as lower nephron nephrosis. Cortical necrosis occurs in association with clinical states that likewise are associated with lower nephron nephrosis, thereby confusing the distinction further. Rare instances of lower nephron nephrosis may progress to a fatal termination within ten to sixteen days in a manner clinically identical to that of bilateral cortical necrosis. Although unproved at present, the possibility of less fulminant forms of bilateral cortical necrosis from which patients might recover cannot be denied entirely. On theoretic grounds such a partial lesion should exist; in the event that it could be demonstrated in the future in a generally acceptable fashion, the clinical confusion with lower nephron nephrosis would be accentuated. Of greater fundamental importance are the considerations by various workers in this field that bilateral cortical necrosis and lower nephron nephrosis are related pathogenetically and that the mechanism in the production of these two lesions is the same but of varying intensity.

This communication is divided in two parts. In the first portion are reported two additional cases of bilateral renal cortical necrosis, one occurring during pregnancy and one in an infant suffering from diarrhea and circulatory failure. The second part deals with the experimental production of renal cortical necrosis and its bearing on the pathogenesis of this disorder.

From the Department of Pathology of the Southwestern Medical School of the University of Texas.

Read before the Section on Clinical Pathology, State Medical Association of Texas, Annual Session, Fort Worth, May 3, 1950.

CASE REPORTS

CASE 1. *History.*—A 29 year old Negress, gravida 4, para 0, approximately seven months pregnant, had intermittent abdominal cramps for one week. She was otherwise fairly well until twenty-seven hours prior to admission, at which time she began bleeding severely from the vagina and developed severe abdominal pain. Fifteen hours before admission she was catheterized and three tablespoons of urine were obtained. Six hours before admission she had a convulsion. The previous pregnancies had terminated in stillbirths at approximately five months.

Physical Examination.—The patient was obese, was comatose, and exhibited prominent edema of the extremities. The blood pressure was 180/120 and the pulse rate 108. The eye grounds had an estimated arteriovenous ratio of 1 to 3 and otherwise were normal. The eyes diverged and wandered aimlessly. The lungs were clear. There was slight vaginal bleeding and the uterus was hard and tender.

Laboratory examination revealed the following: hemoglobin 5.35 Gm. per 100 cc. of blood, white blood cell count 18,100 per cubic millimeter with a left shift, urea 64 mg.

per 100 cc. of blood, uric acid 11 mg. per 100 cc. of blood, and carbon dioxide combining power 28 volumes in 100 cc. of plasma. No urine was obtained upon catheterization.

During the following three days coma persisted, the blood pressure rose to 230/130, the urea rose to 215 mg. per 100 cc. of blood, and the total urinary volume was 35 ml. The patient received 2,500 ml. of blood, partly as concentrated red blood cells. The daily fluid intake other than blood varied between 400 and 1,100 ml. Penicillin therapy (100,000 units every three hours) and morphine sedation were instituted. The rectal temperature fluctuated near 104 F. and the pulse rate near 120.

On the third day the membranes were ruptured and a macerated fetus was delivered. Behind the placenta were two large clots and the obstetricians believed that the placenta had been completely separated.

The blood pressure remained elevated, coma and anuria persisted, and on the fourth hospital day the patient died after several convulsions. Autopsy was performed shortly after death.

Gross Findings.—The pleural spaces contained about 300 ml. of blood-tinged fluid. The right and left lungs weighed 920 and 590 Gm. respectively. Abundant edema of the lower lobes existed. The heart weighed 510 Gm. and there was predominant enlargement of the left ventricle. The liver weighed 2,080 Gm. and was grossly normal. The uterus weighed 770 Gm. and had a ragged lining and several hemorrhagic foci in the myometrium. The brain revealed multiple punctate hemorrhages in the cerebral white matter and pons varolii.

The right and left kidneys weighed 280 and 250 Gm. respectively. The capsule stripped readily and left a smooth surface dotted with small hemorrhages. Throughout the cortex were whitish foci measuring from 2 to 5 sq. cm. on cut surface involving most of the cortex, especially its outer two-thirds. The appearance was typical of cortical necrosis.

Microscopic Findings.—The myocardial fibers were hypertrophied, the lungs hyperemic and edematous. The architecture of the liver was preserved, and passive hyperemia but no necrosis was present. The gastrointestinal tract, pancreas, adrenal glands, and brain were not remarkable. The myometrial fibers were hypertrophied and appeared hyalinized; their nuclei were pyknotic.

The kidneys revealed cortical necrosis. The necrosis was of the ischemic type; the architecture was identifiable but the

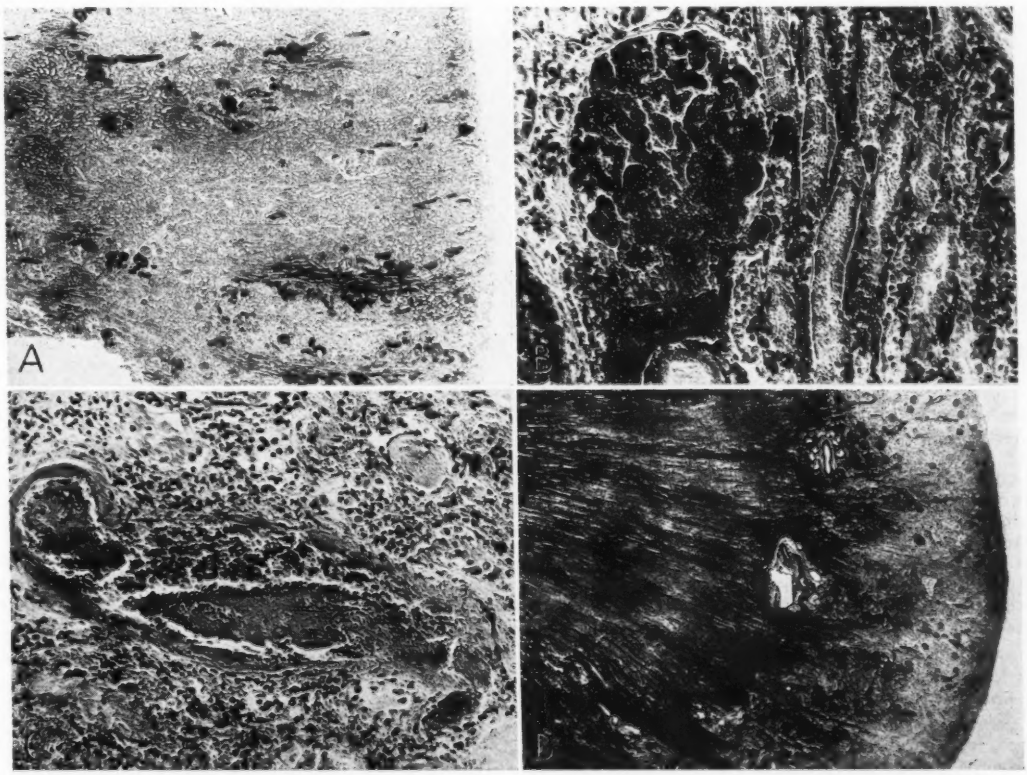

FIG. 1. a. Case 1. The renal cortex and a portion of the medulla of kidney are shown. Beneath the capsule an occasional tubular segment is intact but the remainder of the cortex down to the medulla shows coagulative necrosis. The intense congestion of certain glomeruli is evident; other glomeruli are likewise congested but the red cells are laked and are not apparent. x 7.0.

b. Case 1. Higher magnification of a congested glomerulus containing intact red cells alongside which are necrotic tubules and peritubular congestion. x 103.4.

c. Case 1. An artery within the necrotic cortex showing disintegration of the media and partial blockage of the lumen by an eosinophilic smudge resembling the necrotic wall. x 107.6.

d. Case 2. Kidney showing ischemic necrosis of the outer two-thirds of the cortex and marked medullary congestion. Note that in focal points the juxtamedullary zone is also necrotic. The glomeruli are markedly congested but diffusion of the hemoglobin of the red cells makes this unapparent. x 1.2.

nuclei were absent. There was slight leukocytic infiltration. A narrow zone beneath the capsule had been spared. The necrosis was prevalent in the outer two-thirds of the cortex; however, in isolated foci it extended to but did not include the medulla (fig. 1a and b), indicating that the juxtamedullary zone was involved in a focal manner. Foci within the outer cortex were not necrotic although these areas were small and well separated. These zones showed dilated tubules filled with a castlike protein precipitate. Certain glomeruli here were hyperemic but the blood vessels were intact. Within the necrotic areas most glomeruli were intensely congested (fig. 1a and b). Other changes within the glomeruli included hemorrhage into the capsular space,

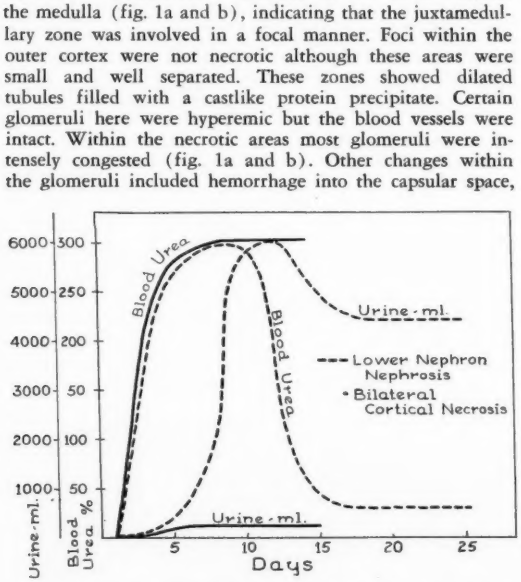

FIG. 2. Graph demonstrating idealized changes in the urinary volume per twenty-four hours and blood urea concentration in bilateral cortical necrosis and lower nephron nephrosis. During the first five to seven days the values are similar; subsequently, the forces of recovery become evident in lower nephron nephrosis, whereas in bilateral cortical necrosis the progress is one of unrelenting renal failure ending in death. The progress in time is the main means of differentiating these two states short of renal biopsy.

focal dissolution, and hyaline eosinophilic masses apparently within the capillaries. A rare glomerulus revealed epithelial proliferation and crescent formation. Groups of the necrotic tubules were filled with well preserved red blood cells. The blood vessels within the necrotic zones likewise were necrotic, and the walls had been transformed into an amorphous eosinophilic smudge. In some segments the lumen was partly or completely occluded by a similar eosinophilic material, giving the impression that this substance represented material extruded from the wall into the lumen (fig. 1c). The glomerular arterioles were affected in a similar manner. No like vascular changes were noted outside the areas of cortical necrosis. The medulla was markedly hyperemic but its tubular segments were preserved.

CASE 2.*—A 1 month old, male, Latin-American infant was admitted to Bradford Hospital (Dallas) with a history of listlessness and diarrhea of three days' duration.

Examination revealed a stuporous, dehydrated, poorly nourished infant with rapid respiration. Later he developed peripheral circulatory failure which responded to fluid therapy. The following day he appeared conscious, but the diarrhea persisted and sulfadiazine therapy was begun.

Two stool cultures were negative for the typhoid-dysentery group of organisms. Abdominal distension was partly relieved by stomach and rectal tubes. Cardiac dilatation and pulmonary and peripheral edema developed. There was no response to digitalis and the patient succumbed on the fourth hospital day.

Autopsy Findings.—The infant was 20 inches long and weighed 6 pounds. Generalized edema was present. The heart weighed 23 Gm. The lungs weighed 62 and 44 Gm. and were markedly edematous. The liver was 4.5 cm. below the costal margin. The gastrointestinal tract revealed no evidence of inflammation and was moderately distended. The kidneys weighed 44 Gm. There was marked medullary hyperemia and multiple white foci were present throughout the cortex which was bordered by hyperemia (cortical necrosis).

Microscopic Findings.—The lungs revealed hemorrhagic edema. Except for the kidneys the viscera appeared normal. The kidneys demonstrated ischemic necrosis of the outer two-thirds to three-fourths of the cortex. An occasional tubule near the capsule was intact. The necrosis extended partly into the medulla in focal areas. Within the necrotic area the architecture was preserved but the nuclei were faded. The glomeruli were intensely congested. Marked peritubular congestion and focal hemorrhages were observed. The only necrotic blood vessels were within the zone of necrosis. The medulla was extremely congested but otherwise unaltered (fig. 1d).

Comment

That bilateral renal cortical necrosis occurs under various circumstances once more is demonstrated by these 2 cases. In 1941 Duff and More[9] reviewed 71 cases of cortical necrosis and observed that 48 occurred during pregnancy, two-thirds of the patients being older than 30 years of age. The disturbance usually occurred between the fifth and eighth months; 50 per cent of the instances were preceded by hemorrhage and 25 per cent by toxemia. Case 1 conforms with this classic pattern. As emphasized by Ash,[1] a similar lesion occurs in nonpregnant women and in men. Dysentery has been mentioned several times as the antecedent disturbance. Reports of bilateral cortical necrosis in infants, however, are rare as discussed recently by Mallory.[17] Case 2, therefore, is of interest in emphasizing the wide spectrum of circumstances associated with bilateral cortical necrosis and in adding another instance of its occurrence in an infant.

Both cases demonstrate the greater sensitivity of the outer zones of the renal cortex to the lesion of cortical necrosis. A few microscopic features require re-emphasis. In focal areas the zone immediately adjacent to the medulla was necrotic in both cases and consequently the juxtamedullary zone was not completely spared. Case 1 revealed necrosis of the blood vessels but only within the necrotic areas, and no classic thrombosis was seen. The necrotic arteries appeared to slough partly into the lumen, producing a picture of partial luminal occlusion by the necrotic slough. The glomeruli within the necrotic areas were distinctly congested. This distension of glomerular capillaries by red blood cells precluded the primary occurrence of thrombosis within preglomerular arteries or arterioles, for such a happening would prevent the glomerular congestion and hemorrhage. These observa-

**We are indebted to Dr. Diane Croll for the material on this case.*

tions are in keeping with those of Dunn and Montgomery.[10]

The clinical course of bilateral cortical necrosis is one of severe and persistent renal insufficiency and death. This is a distinct contradistinction to lower nephron nephrosis in which recovery is expected in at least 80 per cent of patients if properly managed.[18] The early clinical phase of these two disorders overlap and their features are represented graphically in figure 2 by the changes in urinary volume and blood urea. In time clinical progress tends to distinguish between these two forms of acute renal insufficiency.

Extensive ischemic necrosis of the renal cortex is not confined to bilateral or symmetrical renal cortical necrosis. Necrosis of the renal cortex may occur with equal fury and may be attended by the same fatal course of renal insufficiency as a result of processes of known pathogenetic background. Among these may be mentioned multiple emboli to the kidney with extensive infarction, multiple thromboses of intrarenal arteries as after severe trauma to the kidneys, and thrombosis of the renal vein. In these instances one is dealing with ischemic necrosis of established etiology, whereas in bilateral (symmetrical) cortical necrosis the pathogenesis is as yet controversial.

PATHOGENESIS

The pathogenesis of bilateral (symmetrical) cortical necrosis of the kidneys has remained a controversial issue.[1, 8, 9, 10] The lesion most often is encountered in pregnancy and toxemia and concealed retroplacental hemorrhages have been common accompaniments. The disease occurs, however, in nonpregnant women[1, 10] and in men under varied circumstances,[3, 14, 16] such as infections, shock, and peritonitis. Experimentally the necrosis can be induced by various agents, namely staphylococcal toxin[7, 11, 13] meningococcus and its toxin,[5] dioxane, lithium carmine, diethylene glycol, and other chemicals.[2, 5, 12] It is generally agreed that under these various clinical and experimental circumstances the lesions are morphologically similar. Consequently, there has been no objec-

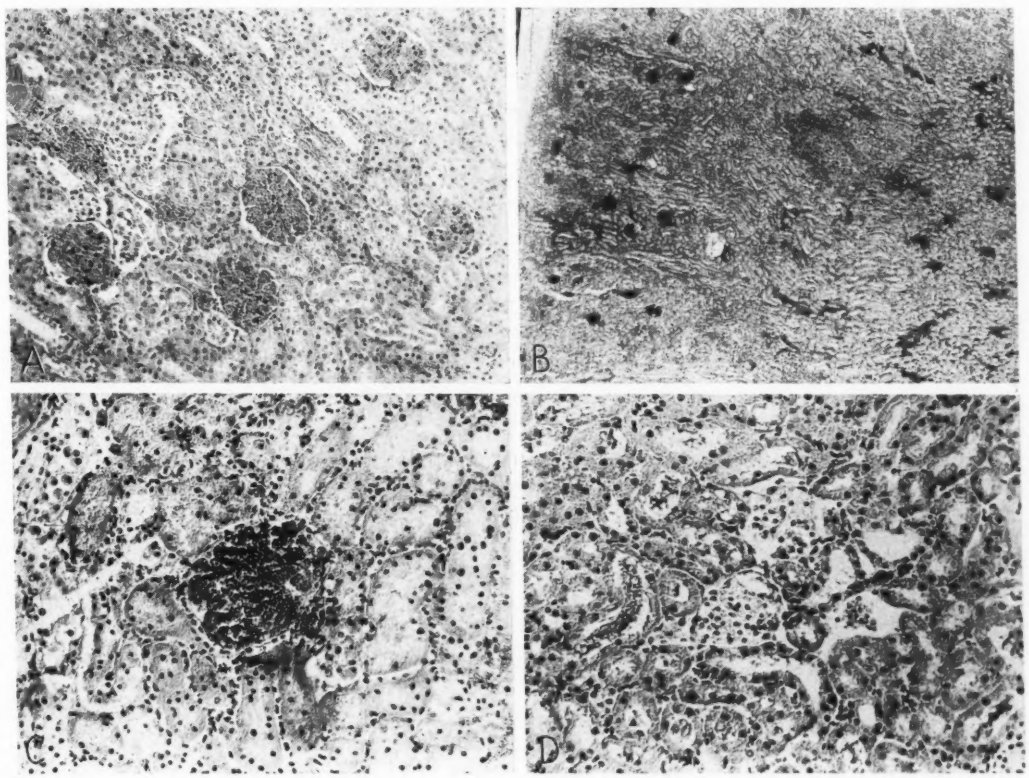

FIG. 3. a. Rabbit 14 given diluted staphylococcal toxin intravenously. Marked glomerular congestion and intact tubules may be seen. x 78.0.

b. Rabbit 76 which had a right nephrectomy, then was given 0.1 ml. staphylococcal toxin directly into kidney. Coagulative necrosis of cortex down to medulla and marked glomerular congestion may be noted. x 12.4.

c. Higher magnification of *b* showing glomerular and peritubular congestion and necrotic tubules. The nuclei are pyknotic or faded and scattered neutrophils are present. x 103.4.

d. Rabbit 63 which had a nephrectomy, then was given toxin into the opposite kidney. Two glomeruli showing pyknosis and dissociation considered as early phase of necrosis may be seen. The tubules are intact. The tissue was fixed immediately after death. x 24.8.

tion to experimentally induced lesions as a means of attempting to interpret the disturbance as seen in human beings.

Since the necrosis is of coagulative type and resembles an infarct, it is considered to result from ischemia. An earlier view considering epithelial damage as the primary disturbance has been revived recently by Glynn,[13] who noted changes in the mitochondria at an early stage. The possibility that such changes might result from hypoxia was not completely ruled out. Most workers in recent years have agreed that the circulation through the necrotic areas ceases; the cause of this ischemia has been the main controversial point.

From the literature eight different views on the cause of the ischemia can be obtained. Juhel-Renoy,[15] who is usually credited with the first case report in 1886, was an advocate for embolism, a possibility that has been abandoned. Ischemia by increased intrarenal pressure as postulated by Zaaijer[23] likewise has been discarded, although a similar explanation of the mechanism of cortical necrosis associated with choline deficiency[4] has been entertained recently. Thrombosis of intrarenal arteries and arterioles has been seen often, but in view of observations mentioned elsewhere, primary thrombosis as discussed by Crook[6] and Von Zalka[22] appears unlikely. The necrosis may occur in the absence of observed thrombosis of interlobular arteries or arterioles.

The five remaining concepts of the pathogenesis of the ischemia in each instance consider a primary nonthrombotic vascular disturbance followed by stasis, necrosis, and thrombosis. These concepts may appear similar but in essence they differ basically.

Scriver and Oertel[20] supported by Ash[1] concluded that vasospasm occurred first and was followed by vasoparalysis, stasis, and thrombosis. In recent years Trueta and his co-workers[21] have described ischemia of the outer two-thirds of the renal cortex and divergence of the renal blood flow through the juxta-

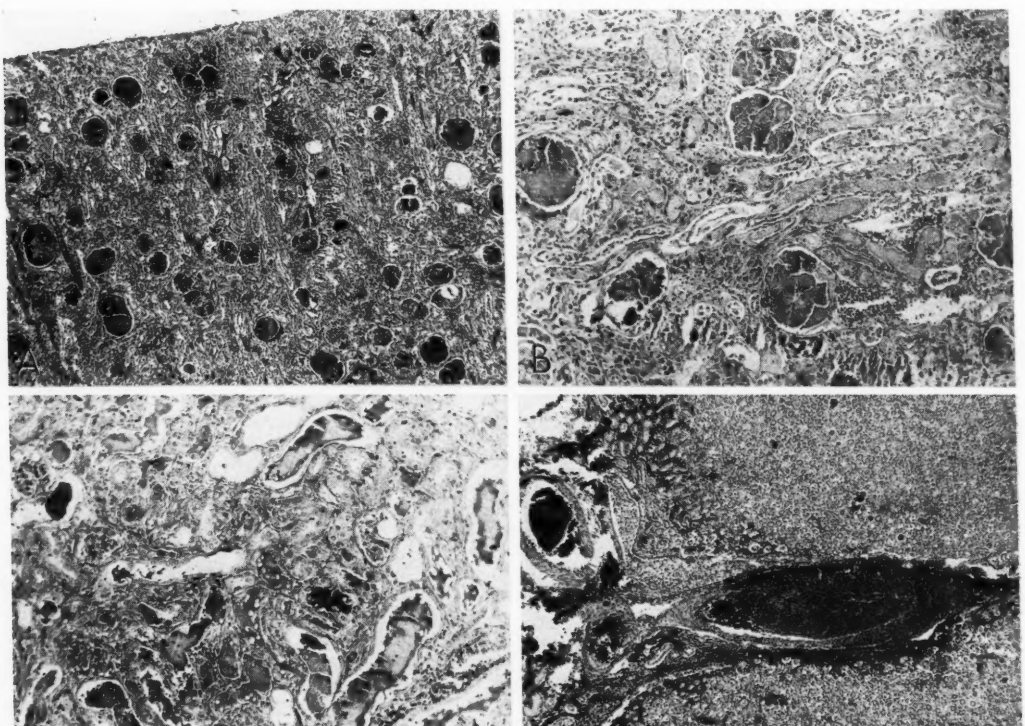

FIG. 4. a. Rabbit 71 given toxin directly into renal artery. Dissolution and congestion of glomeruli are shown. The intervening tubular elements are necrotic. The capsular spaces of the glomeruli are partly filled with protein precipitate. The opposite kidney, serving as a control, was normal in appearance. x 20.7.

b. Higher magnification of *a*. x 62.1.

c. Rabbit 52 given toxin directly into renal artery. Marked distention of tubules by castlike protein precipitate and attenuation of epithelial lining are shown. The glomeruli are compressed and distorted. x 70.3.

d. Rabbit 63 given toxin into the renal artery. Extensive coagulative necrosis of cortex bordered by layer of polymorphonuclear neutrophils may be seen. A longitudinal section of an artery shows necrosis in the zone of cortical necrosis and intact wall outside the cortical necrosis. x 24.8.

medullary glomeruli and vasa recta. In the words of Franklin, "bilateral cortical necrosis is the maximal, irreversible result of the operation of this renal shunt." De Navasquez[7] concluded from his experiments that the intralobular artery was directly damaged and that stasis occurred without the development of vasospasm. The stasis in the glomeruli, arterioles, and arteries was considered to be followed by thrombosis. Black-Schaffer and his co-workers[5] interpreted the experimental lesions as a manifestation of the Shwartzman phenomenon, which cannot occur without the establishment in the renal vessels of a state of hyperirritability. The ischemia was thought to be the result of vasospasm and conglutination of red blood cells.

Dunn and Montgomery,[10] supported by Heggie, studied the sequence of events leading to stasis, ischemia, and thrombosis along modified but basically different lines. The essential disturbance was considered to be a great dilatation of glomerular capillaries. This change presumably was followed by the escape of most of the plasma fluid by filtration, marked stasis within the glomeruli, and the formation of fibrin thrombi. Cessation of the glomerular blood flow was the primary disturbance and apparently was followed by necrosis of the tubules, dilatation of the arteries, and eventually thrombosis. The circulatory arrest was thought to be incomplete in the proximal parts of the interlobular arteries as a result of the escape of blood through the deep glomeruli whose afferent arterioles pass directly into the medulla and not to the cortical capillaries. This explanation based on the observation of 15 human cases considered the unique capillary circulation of the kidney.

Our experience with the experimental forms of renal cortical necrosis resulted from an attempt to induce cortical necrosis and lower nephron nephrosis by variations in the intensity of the same technique. This approach constituted an effort to ascertain whether the two lesions were related pathogenetically.

Trueta and his co-workers[21] have intimated that the lesions of bilateral cortical necrosis and those of crush syndrome are related. Others have considered the possibility of a relationship between cortical necrosis and the entire group of diseases known as lower nephron nephrosis. According to one view, cortical necrosis might result from an extensive grade of the "renal shunt," whereas milder grades of the same mechanism might give rise to lower nephron nephrosis as a result of the greater demand for oxygen by the distal tubular segment.

EXPERIMENTS

Since cortical necrosis can be readily induced in the rabbit by means of injected staphylococcal toxin, it appeared worth while to attempt to induce lower nephron nephrosis by the same technique in attenuated form. Although results were negative, our observations tended to support the concept of Dunn and Montgomery of the pathogenesis of cortical necrosis; to this end the results are recorded.

Methods

The same batch of staphylococcal toxin was used throughout the experiments.* Healthy adult rabbits of either sex averaging 2 kg. were used. Five different methods of introducing the toxin were tested: (1) Undiluted toxin (average dose 0.19 ml. per kilogram) was injected slowly into the marginal vein of the ear. (2) Toxin diluted in 10 ml. of saline solution (average dose 0.14 ml. per kilogram) was injected slowly intravenously. (3) Diluted toxin (average dose 0.15 ml. per kilogram) was injected slowly intravenously after a hemorrhage of about 30 ml. (4) Under ether anesthesia 0.1 ml. of toxin followed by 4 ml. of saline solution was injected rapidly into the abdominal aorta above the renal arteries while the lower portion of the aorta was pinched. (5) Under nembutal-ether anesthesia a right nephrectomy was performed and 0.1 ml. of toxin followed by 4 ml. of saline solution were injected rapidly into the aorta above the left renal artery while the aorta in the lower part of the abdomen was pinched temporarily.

The kidneys were obtained soon after the animal died or was killed and were fixed in formalin. Sections were prepared in the usual manner and stained with hemotoxylin and eosin.

Results

Sixty-three rabbits were used. The intravenous route, with or without dilution of the toxin and with or without a prior hemorrhage, was attended by too high a percentage of immediate mortality. It appeared that this high mortality resulted from the general effects of this batch of toxin, for frequently the ani-

TABLE 1.—*Negative Results in 40 Rabbits with Normal Kidneys by Gross and Microscopic Examinations.*

Procedure	Average Dose Toxin	No. Rabbits	Results
Undiluted toxin Intravenous route	0.19 ml./kg.	6	5 died in few minutes
Toxin diluted in 10 ml. saline solution Intravenous route	0.14 ml./kg.	4	All died in few minutes
Hemorrhage, average 30 ml., followed by diluted toxin 10 ml. Intravenous route	0.15 ml./kg.	8	6 died in few minutes 1 lived 41 days 1 lived 17 days
Toxin followed by 4 ml. saline solution Into aorta above renal arteries	0.1 ml.	11	4 died in 1-12 hr. 5 killed after many days 2 unknown
Right nephrectomy then toxin followed by 4 ml. saline solution Into aorta above left renal artery	0.1 ml.	11	5 died in 2-16 hr. 3 killed after many days 3 unknown

**We are greatly indebted to Dr. H. D. Piersma of the Lederle Laboratories, Pearl River, N. Y., for furnishing us with Staphylococcus toxin no. 80B37.*

mals died in convulsions. For this reason the direct renal route was devised. The results were more gratifying, as 41 animals survived into the period in which lesions are seen; of these 45 per cent demonstrated cortical lesions.

Tables 1, 2, and 3 summarize the results. As expected, the lesions were identical whether the toxin was injected into a superficial vein or directly into the renal artery. By using the direct route the dose

TABLE 2.—*Positive Results in 4 Rabbits Given Toxin Slowly by Intravenous Route.*
(Average Dose 0.13 ml. of toxin per kilogram of weight diluted in 10 ml. of saline solution.)

No. Rabbits	Survival	Lesions
1	3.75 hr.	Marked glomerular and peritubular tubular congestion
1	5.5 hr.	Marked glomerular and peritubular congestion, focal cortical necrosis
1	43 days	Focal cortical necrosis with calcification
1	2 days	Confluent cortical necrosis in outer one-half of cortex, hemorrhages in glomeruli and tubules

causing the lesion in about 50 per cent of the animals could be reduced by half. The right kidney removed surgically from the group which received toxin by the direct route was normal on each occasion and served as a control.

Two major morphologic alterations were observed in the entire group showing lesions, namely (1) marked glomerular and peritubular congestion and (2) coagulative necrosis of proximal and distal tubular segments and collecting tubules within the cortex (fig. 3a, b, and c). The capillaries of the glomeruli were extremely distended with packed red blood cells so as to push the tuft against Bowman's capsule. Outside the necrotic zones isolated variants of this glomerular change included hemorrhages in the capsular spaces and tubules and necrosis of a glomerular lobule. In two instances most glomeruli were disrupted and apparently necrotic (fig. 3d, 4a, and b). Thrombosis was not noted in any specimen.

TABLE 3.—*Positive Results in 19 Rabbits in Which Right Nephrectomy Was Followed by Administration of Toxin.*
(Dose of 0.1 ml. of toxin was followed by 4 ml. of saline solution injected into the aorta above the left renal artery while the aorta was pinched temporarily below the kidney.)

No. Rabbits	Lesions
	8 died in 1-6 hr.
6	Marked glomerular and peritubular congestion Average 60% of glomeruli congested per section
1	Marked glomerular and peritubular congestion, focal cortical necrosis About 80% of glomeruli congested per section
1	Glomerular necrosis
	11 died in 10-39 hr. (av. 22 hr.)
1	Marked glomerular and peritubular congestion About 40% of glomeruli congested per section
5	Marked glomerular and peritubular congestion, focal cortical necrosis About 80% of glomeruli congested per section
4	Confluent cortical necrosis
1	Marked generalized tubular distension with protein precipitate, atrophy of tubules, focal cortical necrosis

The necrosis of the tubules varied in the extent of cortical involvement. Often groups of nephrons were necrotic and were bounded by intervening zones of normal appearing tissue in which glomerular and peritubular congestion frequently occurred. Less often confluent necrosis involving most of the cortex appeared. Rarely an isolated nephron was necrotic. The necrosis was more prevalent in the outer zones of the cortex, as observed by most workers. On occasions the necrosis extended to the beginning of the medulla (fig. 3b) and consequently involved the juxtamedullary portion of the cortex. On one occasion most tubules within the cortex, including proximal and distal segments, were greatly distended with a protein precipitate resembling casts, obviously derived from the glomeruli (fig. 4c). A less extensive grade of this change was observed on other occasions. The lining of the tubules associated with this change was compressed and atrophic. Necrosis of arteries and arterioles was confined to the areas of cortical necrosis (fig. 4d). In one other instance an animal killed after forty-three days revealed calcified foci of necrosis. Infiltration by polymorphonuclear neutrophilic leukocytes was scanty and occurred usually when survival exceeded ten hours.

Medullary hyperemia varied between negligible and marked degrees. Casts usually could be identified within collecting tubules in the medulla. The number of casts was also a variable finding.

Comment

These experiments yielded only two types of positive findings: (1) evidences of extreme glomerular and peritubular stasis and (2) cortical necrosis. In a few instances the glomerular stasis was associated with glomerular hemorrhages or necrosis. Two logical explanations for the necrosis might be (1) ischemia due to glomerular stasis and (2) direct epithelial damage by the toxin. The latter explanation, already largely discarded by other workers, cannot be entirely excluded although it appears unlikely in view of the ischemic form of the necrosis, that is, coagulative necrosis involving all tubular segments in the cortex and the intervening connective tissue. On the other hand, the glomerular stasis with sludging of packed red blood cells in the glomerular capillaries offers a direct explanation for the ischemia and necrosis. This concept is supported further by the frequently focal nature of the necrosis, as various grades of obstruction to the blood flow within various glomeruli are conceivable.

These observations are in complete agreement with the thesis of Dunn and Montgomery,[10] who have pictured the pathogenesis of the lesion in human cases as follows: (1) dilatation of glomerular capillaries probably on an inflammatory basis, (2) markedly accelerated filtration of plasma fluid, (3) extreme con-

centration of red blood cells with stasis of the glomeruli, (4) ischemia and necrosis of the cortical tubules, and (5) stasis within antecedent arterioles and arteries with possible thrombosis of these vessels. With one exception we visualize the same disturbances in the rabbit's kidney subjected to the influence of staphylococcal toxin. Rather than considering dilatation of glomerular capillaries as primary, it appears more plausible to conceive of damage and increased permeability of the glomerular membrane and sudden escape of plasma fluid into the tubule. We would prefer to ascribe the capillary dilatation to the packing of the red blood cells into these vessels much in the same way as within the capillaries of a burned site.[19] Such stasis need not be confined to the glomerular structure because the marked hyperemia within the postglomerular peritubular capillaries indicates the possibility of a similar stasis in this zone. The delivery of concentrated blood into these capillaries conceivably would indicate the need for only a relatively minor further escape of vascular fluid for stasis to occur in this capillary area. Theoretically, the glomerular damage could be a direct effect on the glomerular membrane or it could result from temporary preglomerular vasospasm.

Finally, we wish to emphasize our inability to produce lesions resembling lower nephron nephrosis by the injection of staphylococcal toxin. Other workers have not mentioned such a lesion and presumably they likewise did not encounter it as a result of injection of the toxin. Either the kidneys were normal in appearance or they showed glomerular and postglomerular congestion with or without necrosis. This is a negative observation and consequently not conclusive. It does lend for caution in ascribing varying intensities of the same mechanism as being causative in renal cortical necrosis and lower nephron nephrosis.

CONCLUSIONS

Two cases of bilateral (symmetrical) renal cortical necrosis are reported. One occurred during pregnancy and followed the classic pattern; the other in an infant. The diverse conditions associated with this renal lesion once more are emphasized.

The concepts of the pathogenesis of symmetrical cortical necrosis of the kidneys are reviewed.

Cortical necrosis was induced in rabbits by the injection of staphylococcal toxin into a peripheral vein and directly into the renal artery. Two major morphologic changes, marked glomerular and postglomerular congestion, suggesting stasis, and cortical necrosis were noted. No thromboses or arterial necrosis outside the necrotic areas were observed.

The thesis of Dunn and Montgomery which considers cessation of glomerular blood flow as the cause of the ischemia appears to be supported by these observations.

It is suggested that the toxin causing damage to the glomerular membrane thereby effects a rapid escape of plasma fluid into the tubule and that postglomerular capillary stasis also may play a part in the mechanism of ischemia. The immediate cause of the glomeruli damage was not elucidated in our experiments.

Although cortical necrosis has been produced readily, the same technique has not yielded lower nephron nephrosis. These observations justify caution in ascribing varying intensities of the same mechanism as operating in the pathogenesis of the two lesions.

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ABSTRACT OF DISCUSSION

DR. A. J. GILL, Dallas: This paper calls attention once more to the question of the pathogenesis of cortical necrosis. I do not think that any sound objections can be raised to the idea that cortical necrosis is essentially a phenomenon of ischemia and that the lesion resembles infarct. It appears that more than one possible explanation for the occurrence of the ischemia may exist and that it is hard to be sure of the exact mechanism.

It was a tempting idea that cortical necrosis might be the extreme end stage of the same process which produces "lower nephron nephrosis." That the experimental work of Drs. Smith and Muirhead did not seem to support this is somewhat disappointing.

RENAL CALCULI

Etiology and Differential Diagnosis

VINCENT VERMOOTEN, M.D., Dallas, Texas

OF the specialties radiology is in a class by itself, for the radiologist in reality is a general consultant. There is no branch of medicine with which he is not familiar, and there are very few diseases or conditions about which he is not consulted. General practitioners and specialists ask him for advice and help. His specialty requires therefore that he be able to make differential diagnoses, that he interpret anatomy and physiology both normal and abnormal, and that he recognize from changes in the anatomy and physiology the underlying pathologic process.

Calcific deposits overlying the renal shadows are no longer a problem to the radiologist, for he can readily differentiate gallstones, calcified mesenteric nodes, intestinal contents, and other extrarenal radiopaque shadows by oblique or lateral films. Calcifications in the spleen and splenic or renal arteries also are differentiated with little difficulty from renal calculi, especially when excretory urography is employed. On the whole the diagnosis of a renal calculus is no longer difficult.

Some years ago most urologists and practically all general surgeons had no difficulty deciding what to do with a patient with a renal calculus; either the stone was removed or the kidney excised, provided the opposite kidney were normal. Better understanding of the etiology of renal calculi and the causes of recurrence has made the urologist more cautious and has tended to make his surgery more conservative. Consequently, once more he recognizes the need for the radiologist's help in differentiating the various types of renal calculi.

CALCULUS TYPES

It is necessary to know something about the etiology of renal calculi, their growth pattern, and their radiographic appearance. The urologist must know whether a calculus is a metabolic stone such as cystine, xanthine, or uric acid, an alkaline earth stone, or an oxalate stone.

Except in unusual circumstances, it would be fool-

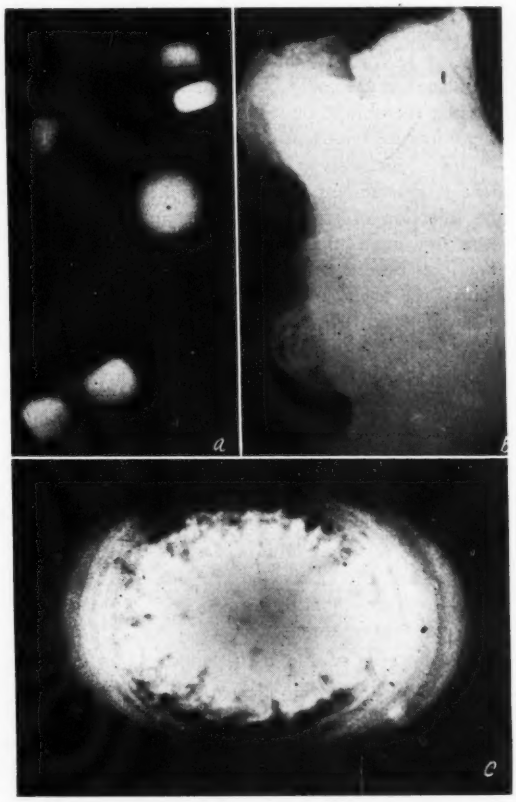

FIG. 1a. Radiograph showing cystine calculi. Note that they are homogenous in consistency and obviously are faceted.

b. Radiograph of an alkaline earth stone which was part of a staghorn calculus. Note the lamellations.

c. Radiograph of a calcium oxalate stone surrounded by a calcium phosphate stone. Note the snowflake-like appearance of the calcium oxalate stone in contrast to the lamellations of the calcium phosphate stone.

Read before the Section on Radiology, State Medical Association of Texas, Annual Session, Fort Worth, May 3, 1950.

ish knowingly to remove a metabolic calculus or to perform a nephrectomy unless the underlying metabolic process can be corrected or at least controlled. As a rule, these calculi are relatively radiotranslucent, but it is surprising how often just enough calcium salts are present to make the calculi radiopaque. Radiologically they show a homogenous density (fig. 1a) and at times they can be recognized by this characteristic. Not infrequently they are multiple and faceted. These observations should make the urologist suspect the metabolic type of calculus sufficiently to encourage metabolic and other studies.

In contrast to the metabolic kind of stone, the lamellated type of calculus (fig. 1b) is always one of the alkaline earth stones and as a rule is primarily calcium phosphate, although frequently ammonium phosphate and carbonate, as well as calcium carbonate, are present. This sort of calculus is usually seen in an alkaline urine which may result from infection caused by a urea-splitting organism. Here again, the type of stone must be determined, for if there is associated infection, it must be ascertained whether or not the causative organism is a urea splitter. If a urea-splitting organism is at fault, the calculus should not be removed unless the infection can be controlled; otherwise, the calculus surely will recur. However, if the calculus is not complicated by a urea-splitting type of infection, the patient's urine must be acidified postoperatively and the acidity maintained, or again there will be a prompt recurrence. Also, it must be proved that the patient does not have hyperparathyroidism before surgery is advised.

If the calculus grows like a snowflake with branching crystals stemming from a central core (fig. 1c), it is composed primarily of calcium oxalate. Here, only time will give a lead. If the calculus is slow growing, there is no need for concern. On the other hand, if it grows rapidly, great care must be exercised in surgery to remove all of the small, fine, soft crystals which cover the surface of the calculus; otherwise there will be left a nidus upon which more calculi may form. An excellent discussion of the formation of calculi from nidi left after surgery is given by Wesson.[7]

In 1937 Alexander Randall[4] of Philadelphia first proved beyond doubt that not infrequently small plaques of calcium salts which appeared on the renal papillae acted as nidi for renal calculi. He observed these plaques in 19.6 per cent of kidneys examined. Later I confirmed[5] his observations; in a series of more than 2,000 kidneys examined plaques of calcium salt were noted in 17 per cent of patients. I observed that the incidence was 4 times greater in the Caucasian than in the pure blooded Negro and was twice as great in men than in women. Subsequently I[6] was able to show, and my observation recently was confirmed by Anderson and McDonald,[2] that these plaques were merely part of a general process of calcium deposition in the renal papillae. The calcification occurs in the collagen fibers, whether in the interstitial tissue (fig. 2a), in the basement membrane of the renal tubule, or in the spinning fibers surrounding a blood vessel (fig. 2b). This type of papillary calcification which is not visible radiographically occurs at all ages but most commonly in the sixth decade; it may also be observed in hyperparathyroidism (Albright type 3). This type of calcification must be differentiated from what appears to be an entirely different type of renal calculus formation called "microliths" by Braasch and "nephrocalcinosis" by Albright; however, I prefer the term "tubular calculi." It is possible that the phosphatic casts observed in the renal tubules in hyperparathyroidism can act as nidi for the formation of these tubular calculi (Albright's type 2). Therefore, patients with this kind of renal calculus, like all others, should be checked for hyperparathyroidism.

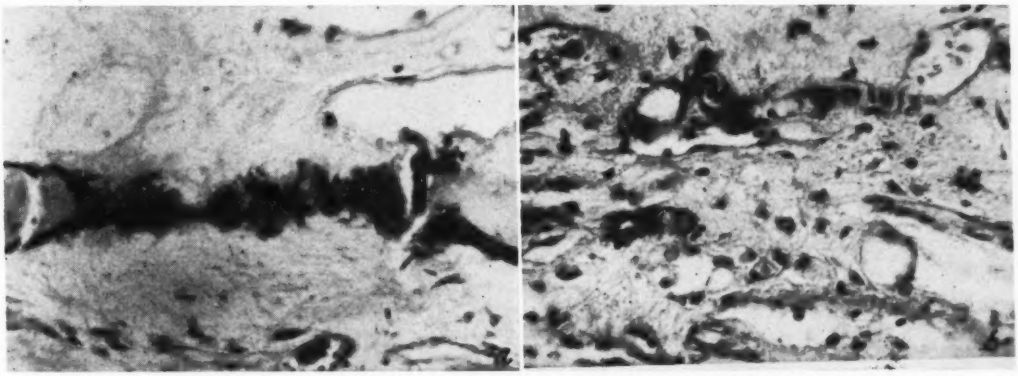

FIG. 2a. Photomicrograph of a section of a renal papilla showing the deposition of calcium in the interstitial tissues.

b. Photomicrograph of a renal papilla showing calcium deposition in the spinning fibers surrounding the blood vessels.

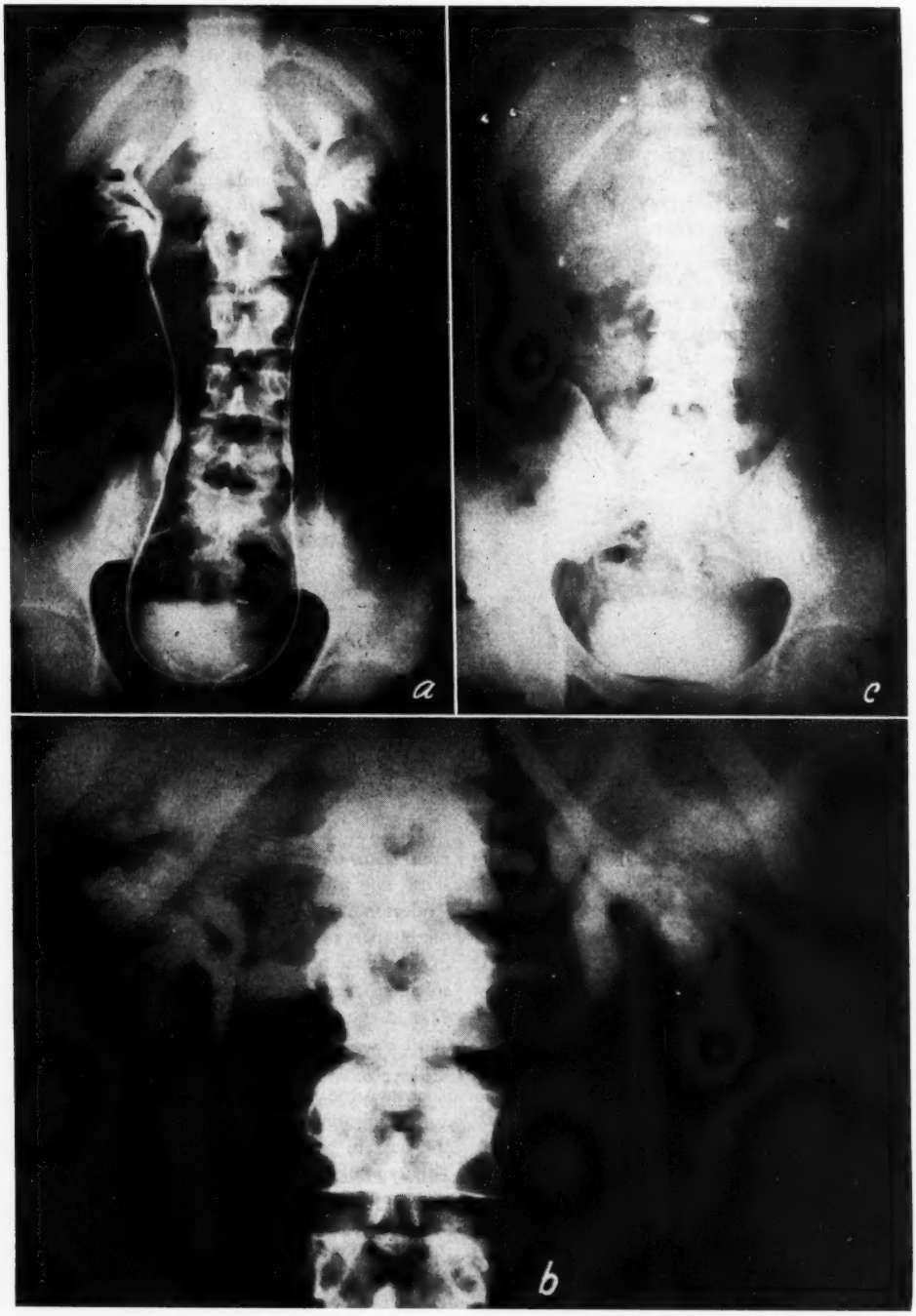

FIG. 3. Case 1. a. A retrograde pyelogram showing the peculiar flattened calices with extension of the opaque medium into the dilated collecting tubules.

b. An excretory urogram showing the opaque medium in the collecting tubules of both kidneys as well as in the pelves.

c. An emptying film showing the opaque medium which has been almost completely evacuated from the collecting tubules as well as from the calices and renal pelves.

In a series of 83 cases of hyperparathyroidism reported by Albright, Sulkowitch, and Bloomberg,[1] 27 per cent of patients had calicinal, pelvic, and ureteral calculi (type 1); 23 per cent had tubular calculi (type 2); and the others (type 3) had a general calcium salt deposition in multiple organs of the body, including the renal papillae.

Albright and his co-workers and others have assumed that the occurrence of tubular calculi is merely part of a process of general deposition of calcium from whatever cause, in the renal papilla. Muschat and Koolpe[3] suggested that the tubular epithelium becomes hyperplastic, then blocks the tubule, then by degeneration and disintegration forms a homogenous mass of fibrin which they called a "pearl." These pearls, when

FIG. 4. Case 1. Note the deposition of calculi in the tubules of both kidney areas.

encrusted with urinary salts, are rapidly transformed into calculi whether they have dropped into the pelvis or have remained in the tubule.

The infrequent occurrence of this type of renal calculus suggests the possibility that some lesion may affect the collecting tubules and that stasis within the tubules may play a part in the formation of calculi therein. The following case reports substantiate this possibility although such a lesion to my knowledge has not been previously described.

CASE 1.—A 20 year old man was seen because of persistent attacks of gross hematuria. Studies including a renal function test were well within normal limits. Cystoscopic examination revealed a normal lower urinary tract. Catheters were passed without difficulty. A scout film revealed no sign of urinary calculi, and retrograde pyelography showed peculiarly flattened and deformed minor calices with an unusual mottling of the opaque medium in the region of the pyramid (fig. 3a).

Excretory urograms were still more fascinating and unusual, for in them could be seen the collecting tubules filled with the opaque iodide; it appeared as if a bunch of grapes was attached to each minor calyx (fig. 3b). The renal function was within normal limits and the organic iodide was readily eliminated from the pyramid, calices, and pelvis. In the emptying film (fig. 3c) it can be seen that the contrast medium emptied as readily from the collecting tubules as from the calices and the pelvis.

From these films a reasonable deduction would be that the collecting tubules have numerous cystic dilatations along their course and that they retain enough of the contrast medium to be visible in the roentgenogram. From the rapid emptying it also might be assumed that the cystic dilatations are not the result of stricture or obstruction. Reexamination of the patient five years later showed that calculi had formed in the dilated collecting tubules (fig. 4). In this instance the dilatation of the collecting tubules was primary and not secondary to the formation of the calculi.

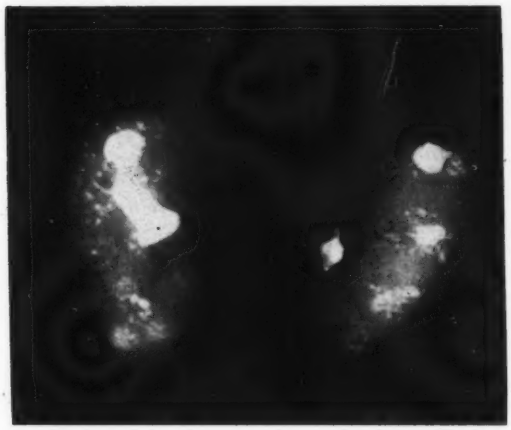

FIG. 5. Radiograph of the kidneys after autopsy showing a few individual calculi within the calices and pelvis of each kidney and with multiple calculi in the tubules filling the pyramids on both sides.

CASE 2.—A 64 year old man was admitted to the hospital with symptoms and findings pointing to a benign prostatic enlargement. He had no symptoms referable to the upper urinary tract. However, during a routine preoperative urinary study the excretory urogram revealed a lesion identical with the one in case 1 except that in a few of the dilated collecting tubules small tubular calculi had already developed.

It has been my experience that tubular calculi commonly occur in the absence of hyperparathyroidism. The following two case reports will illustrate this point.

CASE 3.—A 55 year old man was seen by me because of gross pyuria, marked frequency and urgency of urination, pain, and fever. Studies revealed a severe bilateral renal infection with pyelonephritis and slightly impaired kidney function. The serum calcium was 10.4 mg. and phosphorus 3.8 mg. per 100 cc. of blood. Roentgenography revealed

multiple bilateral tubular calculi and bilateral pelvic calculi. The patient died soon afterward from carcinoma of the stomach, and at autopsy the above observations were confirmed. The parathyroid glands were normal. Radiographic study of the kidney specimen demonstrated beautifully the distribution of the calculi within the collecting tubules (fig. 5).

CASE 4.—J. I., a 62 year old physician, recently was referred to me for consultation because of the increasing size of renal calculi, which his family physician had indicated were large enough to be removed. One glance at the roentgenograms showed that the patient also had tubular calculi

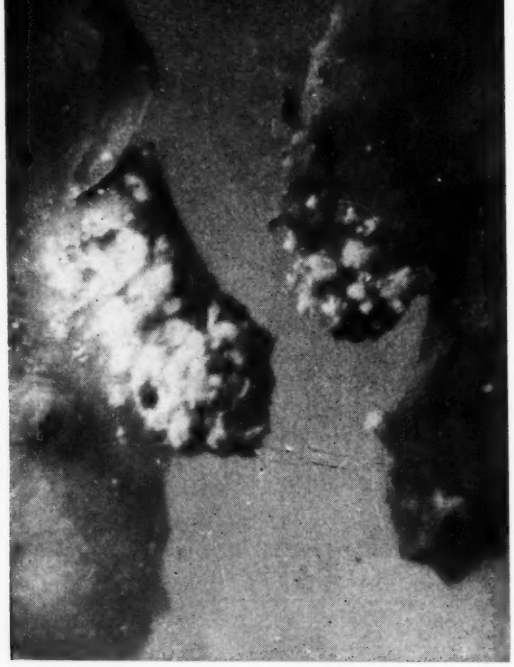

FIG. 6. Enlarged photograph showing massive deposition of uric acid crystals in the collecting tubules of a kidney removed at autopsy from an 8 month old fetus.

and that consequently removal of any calculi would be fruitless. Repeated determinations of the blood serum calcium and phosphorus revealed them to be normal. The bones appeared normal by roentgenography.

The patient has been followed closely since and his diet and fluid intake have been regulated. He has passed at least a dozen small calculi and still is in active practice. Operation in a case of this sort should be done only for palliation, as it would be impossible to remove all calculi without removing the kidney. It also must be remembered that the underlying lesion involving the collecting tubules is always bilateral.

Very few urologists realize that an exactly similar phenomenon happens in fetal life. Not infrequently kidneys of fetuses are noted to have masses of uric acid crystals in the collecting tubules. The accompanying photograph (fig. 6) is a close-up of two renal pyramids solidly plugged with uric acid crystals which were observed in an 8 month old fetus. Could it be that had this child lived, it would have had "congenital" dilatation of the collecting tubules and subsequently tubular calculi with or without hyperparathyroidism?

SUMMARY

The radiographic appearance of the three main types of renal calculi and their basic etiology is reviewed. Several case histories of patients with renal tubular calculi and without hyperparathyroidism are reported.

A "congenital" lesion involving the collecting tubules of the renal papillae is described for the first time. This lesion may bear a direct relationship to the formation of renal tubular calculi.

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ABSTRACT OF DISCUSSION

DR. MILTON DAVIS, San Antonio: The ease of roentgenographic differentiation implied by Dr. Vermooten is true in the majority of instances but occasionally pyelograms in various positions are necessary for the most accurate location of renal calculi.

The big problem which he presents is the demonstration and recognition of metabolic calculi. These calculi of cystine, xanthine, and uric acid are usually translucent; how long before they accumulate sufficient calcium to become opaque may not be known. As Dr. Vermooten has shown, they are characteristically homogenous, and often are multiple and faceted.

He has also demonstrated the two other more common types of calculi: (1) the snowflake stone of calcium oxalate and (2) the lamellated stone which is always alkaline, mostly calcium phosphate. These types occur in alkaline urine with urea-splitting organisms and may be seen in hyperparathyroidism.

For many years it has been my policy to interpret skiagrams in correlation with urologic data in consultation with the urologist.

RENAL CALCULI — Vermooten — *continued*

When the diagnosis calcium oxalate stone, alkaline-earth stone, or tuberculosis cannot be made with the data furnished. the urologist should obtain complete blood chemistry determinations and all additional clinical data possible. Not infrequently the pyelograms should be repeated. By exclusion and correlation a diagnosis can be made on a metabolic basis.

Like Dr. Vermooten, I do not know if a developmental variation or some undetermined lesion involving the collecting tubules is the underlying cause of tubular calculi. The assumption by Albright and his co-workers that the occurrence of tubular calculi is merely part of a process of general deposition of calcium in the renal papillae, from whatever cause, is to be accepted.

Sosman* calls attention to Nazari, who first noticed calcification in and around the tubules after prolonged and severe upper gastrointestinal obstruction and vomiting, and to Martz's discussion upon the pathogenesis of these changes. Martz stated that the changes were due to the marked alkalosis present.

Other interesting articles to read are those by Burkholder and Braund† and by Samuels.‡

Dr. Vermooten has emphasized the close cooperation necessary for better diagnoses.

**Vaughan, J. H.; Sosman, M. C.; and Kinney, T. D.: Nephrocalcinosis, Am. J. Roentgenol. 58:33-45 (July) 1947.*

†Burkholder, T. M., and Braund, R. R.: Massive Calcinosis with Chronic Renal Insufficiency Due to Polycystic Kidneys; Case Report, J. Urol. 57:1001-1009 (June) 1947.

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RETROPUBIC PROSTATECTOMY

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PRIOR to recent years three accepted approaches to prostatectomy have been the suprapubic, perineal, and transurethral resection routes. In December, 1945, Millin of London reported his experiences with "A New Extravesical Technique" of prostatectomy to which he applied the title "retropubic prostatectomy." Millin's operations may be considered an original contribution, although a few scattered articles previously had dealt with the possible advantage of this approach.

During the past eighteen months 39 retropubic prostatectomies have been performed at Parkland Hospital, Dallas. These procedures have been carried out by various operators, utilizing variations of the original Millin technique. The approach which has been worked out and generalized on the Urological Service is described in this paper.

INDICATIONS

During our period of evaluation of retropubic prostatectomy, the procedure has been carried out on patients with various types of prostatic obstructions (table 1). The majority of the series were benign hypertrophy of the trilobar type. Of the 4 patients with carcinoma, 3 were not diagnosed preoperatively. The fourth case was an early carcinoma of the prostate confined to the prostate gland and without evidence of metastasis. The latter carcinoma was removed by a total retropubic approach.

After performing retropubic prostatectomy on the various types of bladder neck obstruction it is our impression that the ideal candidate for this approach is one with a moderate to large adenoma. While the exposure is simplest in a patient with a thin abdominal wall, we were surprised to find that obesity does not make the operation appreciably more difficult if an ample incision is made. The distance from the rectus fascia to the prostatic capsule is approximately uniform in all patients. Certainly the complications of prostatic calculi, vesical diverticuli, vesical calculi, prostatic abscess, and so forth are not contraindications to the operation. The only patient in this series who had an early carcinoma was treated satisfactorily by total retropubic prostatectomy. This procedure was done without any great difficulty, and the postoperative course was smooth.

TABLE 1.—*Indications for 39 Retropubic Prostatectomies.*

Diagnosis		No. Cases
Benign prostatic hypertrophy		34
Five of the benign prostatic hypertrophy complicated by:		
Vesical calculi	2	
Vesical diverticulum	1	
Prostatic abscess	1	
Prostatic calculi	1	
Carcinoma of prostate		4
Contracture of bladder neck or fibrous median bar		1
Total		39

PREOPERATIVE EVALUATION

Preparing a patient with obstructive uropathy for retropubic prostatectomy entails no special or additional preparation other than that required generally by urologic surgeons for a prostatectomy of any sort. At Parkland Hospital the patient's general condition is evaluated: whether he is ambulatory and able to exercise and what his cardiovascular status is, especially pertaining to recent myocardial infarction and decompensation.

Read before the Section on Surgery, State Medical Association of Texas, Annual Session, San Antonio, May 3, 1949.

Routine chest roentgenograms and electrocardiographic tracings are also done. In the strictly urologic workup an air cystogram and excretory urogram are always done and usually a cystoscopic examination is made. In addition, a careful physical examination and routine laboratory procedures, including a determination of blood urea, serum acid, and alkaline phosphatase, are done. If the patient's hemoglobin is not above 10 Gm. per 100 cc. of blood, he is given blood prior to surgery. Our patients are always typed and cross matched prior to surgery, thus avoiding delay should transfusions be needed during or after prostatectomy. Blood loss during this operation is seldom less than 400 cc., and its immediate replacement, preferably during surgery, assures a smooth convalescence with little adverse reaction to the operative procedure; even when the operation has been long and difficult, patients have been devoid of any degree of surgical shock.

OPERATIVE TECHNIQUE

The bladder is lavaged with acriflavine and emptied and a midline incision is made through the skin and subcutaneous tissue down to the fascia of the recti muscles. The incision is extended downward well over the symphysis. The rectus sheath is incised, the rectus muscles are spread apart in the midline, and after the space of Retzius is entered, the patient is placed in Trendlenburg position. The prevesical fat and the peritoneum are reflected up along with the bladder so that the anterior surface of the prostate is reached without any great difficulty. Once the vesical neck and prostatic area are identified, they are carefully inspected to ascertain if any preprostatic capsular veins are large enough to necessitate ligation. If such veins are present, a chromic 0 suture is placed about them in two areas and the veins are divided. The spaces lateral to the prostate are then opened by gentle dissection and a small pack is placed on either side of the prostate, care being taken not to traumatize the pelvic vessels and nerves posteriorly and laterally. These two lateral packs cause the prostate to come forward and upward, fixing it and making it more discernible.

With a suction tube in place, a transverse incision approximately 3 cm. in length is made across the prostate approximately 2 cm. distal to the vesical neck. This incision is first carried through the endopelvic fascia, which is gently separated until the capsule of the prostate is seen. The latter landmark may be recognized as a glistening, firm, fibrous structure. The next stroke of the scalpel carries the incision through the prostatic capsule (true and surgical) into the adenomas proper. This incision almost invariably opens a large capsular vein and artery on the anterior surface of the prostate. The vessels may be included in the grasp of the forceps or if necessary a chromic 0 suture may be used to control the hemorrhage.

An Allis forcep is placed upon the distal portion of the prostatic capsule and with the suction tube keeping a dry field, the prostatic dissection is begun under direct vision using a tonsil dissector. The two lateral lobes are freed from the capsule, first laterally, then anteriorly and posteriorly, and the apex is separated from the urethra with the index finger, or, if exposure permits, it may be cut across with scissors. Lahey thyroid clamps are placed upon first one lateral lobe and then upon the other, and the prostate is delivered from the prostatic fossa. Finally, it is freed from the vesical neck by sharp and blunt dissection, and the vesical neck is caught by an Allis forcep. A hot sponge pack is then placed in the prostatic fossa.

After the prostate has been removed, care must be taken to examine the vesical neck to be sure a median lobe or posterior commissure has not been left behind. If the bladder neck appears too small, a wedge is taken from the posterior lip of the bladder. Four hemostatic sutures are placed in the bladder neck; two laterally, one posteriorly, and finally, one anteriorly. The anterior suture is left long and is utilized subsequently to approximate the bladder neck with the distal portion of the prostatic capsule at the original site of incision. The sponge pack is then removed from the fossa, and it is examined for nodules of remaining prostate and hemorrhaging vessels. Any such bleeding vessels are caught and ligated or fulgurated.

A no. 20 F. Foley catheter is then introduced through the urethra into the bladder and the bag inflated with 5 cc. of fluid. When the catheter is well placed, the prostatic capsule is closed with a continuous chromic 0 catgut using a partial lockstitch type suture. A second line of chromic 0 catgut continuous sutures is taken in the endopelvic fascia closing the incisions in the prostatic capsule and endopelvic fascia water tight. A rubber tissue drain is placed down to the suture line, and the wound closed in layers with chromic 0 catgut interrupted sutures. The skin is closed with either cotton interrupted sutures or continuous dermal, lockstitch type sutures. The catheter is irrigated before and after the wound is closed to ascertain if drainage is proper and if the catheter is set at the right location. Once the operator is convinced the catheter is in the right location, it is sutured to the meatus and taped to the shaft of the penis in the usual manner. The patient is sent to the ward and the catheter connected to a Y tube at the foot of the bed, placed so that it will break the siphonage and allow a small amount of urine to remain in the bladder at all times.

The postoperative care is similar to that given after any other type of prostatectomy. Patients are

given sedation for pain, depending upon age and general condition, and chemotherapy if indicated for infection. It is seldom necessary to do any type of irrigation; usually in from eight to twelve hours the drainage is completely clear and remains thus.

As described in the operative procedure, a drain was left in the space of Retzius for from thirty-six to forty-eight hours. Early in our experience we left the drain in for several days and decided that since it formed a sinus down to the suture line at the closure of the prostatic capsule it was ill advised. Therefore, during the majority of this series, the drain was removed in the earlier period. The indwelling urethral catheter was also removed on the fourth or fifth day, occasionally on the third day if the urine is clear. Our patients were allowed up early; usually on the first postoperative day they sat on the side of the bed and had a general diet. It was seldom necessary to give these older patients much parenteral fluid.

The average number of postoperative hospital days was 14.1 days. The first 7 patients of this series were in the hospital 18.8 days and the last 7 to be discharged spent an average of only 11.1 postoperative days in the hospital.

COMPLICATIONS

The types of complications which resulted in our series of patients and the number of times each complication occurred are summarized in table 2.

Suprapubic leakage of urine. We attributed the suprapubic leakage of urine in these 5 cases to two factors: (1) They were cases which were done early in our series in which the closure of the prostatic capsule probably was not adequate. (2) The drain was left in the suprapubic space for periods of two, five, or seven days which probably produced a sinus in the suprapubic space down to the suture line. As stated previously, we believe leakage is less likely to occur if the drain is removed early.

TABLE 2.—*Complications Following Retropubic Prostatectomy.*

Complication	No. Cases
Suprapubic leakage of urine	5
Secondary hemorrhage	5
Osteitis or osteochondritis of the pubis	3
Ileus	2
Pulmonary embolus	2
Sepsis	2
Incontinence	1
Total	20

Secondary hemorrhage. We have no explanation why 5 patients developed secondary postoperative hemorrhage. Those who deal with urologic and prostatic surgery know that whatever type prostatectomy is done this type complication may result. The patients who had postoperative hemorrhages made uneventful recoveries and were discharged from the hospital, the hemorrhage adding to the morbidity and length of hospitalization in only one instance.

Osteitis or osteochondritis of the pubis. This complication developed in 3 patients after retropubic prostatectomy. In 1 patient the roentgen-ray examination revealed a slight destructive process at the symphysis pubis. The others presented no changes demonstrable to roentgen-ray examination. According to some, these changes occur late in the disease.

Clinically these patients had suprapubic pain and limited motion of the adductor muscles of the thigh. We were unable to follow the case of one patient who died from a coronary occlusion some months after surgery to determine the outcome of the complication. The other 2 patients were treated with stimulating doses of roentgen ray and large doses of vitamin B complex; they responded nicely and the impairment, disability, and pain cleared completely. Nevertheless, this complication is most distressing and by far the most serious of any of the complications. Since the cause or any method of prevention is not known, the complication is disabling and prolonged. In this series it occurred in almost 10 per cent, which is high enough to warrant a conservative attitude toward retropubic prostatectomy until more is known about the cause and prevention of osteitis or osteochondritis of the pubis.

Ileus. It is not surprising that after prostatectomy we should have 2 patients develop ileus the first twenty-four to thirty-six hours. Each of these patients was treated with Wangensteen suction for a short period of time and recovered without any further complications.

Pulmonary embolus. Both patients died of this complication, giving a mortality rate of 5.1 per cent for this small series.

Sepsis. This complication added to the morbidity of the retropubic prostatectomies of our series more than any other complication. In one instance a large prostate, weighing 235 Gm., was removed; and the patient developed a sepsis, apparently communicating with the space of Retzius, although he did not have any suprapubic leakage of urine. Apparently, in the other instance, the same thing occurred. Both cases cleared completely and are asymptomatic.

Incontinence. This case of incontinence resulted from one of our earlier retropubic prostatectomies, and it was thought at the time of surgery that some damage had been done to the external sphincter. This patient subsequently had a repair of the bulbous urethra and external sphincter by the Millin technique and is wholly continent today.

It is of interest that the average age for this series of 39 patients was 67.7 years, the oldest patient being 80 and the youngest 49.

The disadvantage of the retropubic prostatectomy

is that the operation is technically more difficult than a simple suprapubic enucleation. In a certain percentage the complications of osteitis of the symphysis pubis may occur for no apparent reason.

The advantages of the operation as we have observed them are several. Primarily there has been an absence of shock to the patient during as well as after the operation. A complete removal of the obstructing tissue may be accomplished without great difficulty. At all times we have had visual control of the bleeding encountered. Furthermore, the anatomic reconstruction of the bladder neck may be accomplished better and with more ease than in any other type of open prostatic surgery. The smooth postoperative course without suprapubic or perineal leakage of urine which these patients have had has been gratifying. They have had an early and excellent functional result and no impairment of preoperative sexual ability in this series has been noted.

SUMMARY

An analysis of 39 cases of retropubic prostatectomies for various types of obstructive uropathy of bladder neck has been presented. A detailed description of our operative technique has been given. Preoperative and postoperative care, complications, statistical results, advantages, and disadvantages of the operation have been submitted.*

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*AUTHORS' NOTE: Since the presentation of this paper we have assumed a much more conservative attitude toward the use of this procedure because of the complication of osteitis or osteochondritis of the pubis.

ABSTRACT OF DISCUSSION

DR. CHARLES A. HOOKS, Galveston: Drs. King and Fuqua have presented a clear and forthright account of their experience with retropubic prostatectomy.

The technique is not as difficult as transurethral electroresection or perineal prostatectomy. However, in my own group of cases, improved suprapubic transvesical enucleation is favored when open surgical intervention is indicated. A low transverse incision in the anterior bladder wall provides adequate direct visualization of the bladder interior and prostatic cavity without undue manipulation in the space of Retzius. Troublesome complications occur less frequently. The short convalescent period and good functional result compare favorably with those of the retropubic method.

The reportedly high incidence of osteitis of the pubis after retropubic prostatectomy has been the chief deterrent to employment of the method in our clinic. It is a physically and economically disabling complication, its cause is elusive, and preventive measures have not been established.

Each method of prostatectomy must be employed on the merits of the individual problem at hand. The theoretic possibilities of the retropubic approach in radical treatment of early carcinoma of the prostate are indeed interesting, and the retropubic method may assume a place in our attack on prostatic disease.

Appendicitis Sign Disputed

The time-honored theory that tenderness in the lower right quadrant of the abdomen is a sure and quick sign of acute appendicitis is exploded in the November issue of *GP,* journal of the American Academy of General Practice. Dr. Bray O. Hawk and Dr. E. L. Keyes, St. Louis, report on a two year study of symptoms preceding the definite diagnosis of appendicitis. They found that "right lower quadrant tenderness" appeared in only 54 per cent of the cases in the first eight hours of the infection and that it did not appear as a predominant symptom until the second day. Of patients studied 11 per cent did not develop this tenderness.

Their studies revealed, however, that three other symptoms almost invariably (in more than 92 per cent of cases) appear in the first eight hours. These are pain down the midline of the abdomen, a sudden disappearance of appetite, and what they describe as a "downward urge" in the bowel. This trio of symptoms was found in only 12.5 of patients with acute abdominal conditions other than appendicitis, making it almost specific for the onset of acute appendicitis, they argue.

Dependence on "right lower quadrant tenderness" is the commonest cause of delayed diagnosis, the authors claim. By using these three new symptoms instead, they believe that the physician is better able to make a positive diagnosis in the initial eight hour period, thereby increasing the possibility of surgical relief with fewer complications and less postoperative distress.

Ophthalmology Board Examinations

Applications from candidates for the certificate of the American Board of Ophthalmology are now being accepted for the 1952 written test and must be filed before July 1, according to an announcement from the executive office of the Board, Cape Cottage, Maine. Practical examinations during 1951 will be held as follows: San Francisco, March 11-16; New York, May 31-June 5; and Chicago, October 8-13.

Longevity of Diabetic Doctors

Diabetic doctors, estimated to be about one out of every forty, by adherence to a proper regimen can conduct their normal activities and look forward to a life expectancy almost as long as the average physician. In the October 7 issue of *The Journal of the American Medical Association* Dr. Robert F. Bradley of Boston summarizes the records of 475 diabetic physicians who consulted the Joslin group between 1898 and 1947.

SLIDING INTERNAL FIXATION IN FRACTURES OF THE LONG BONES ALLOWING END-TO-END IMPACTION

LOUIS W. BRECK, M.D., El Paso, Texas

TWENTY years ago the three classic ways of treating fractures were (1) closed reduction and application of a cast or splint, (2) traction, and (3) open reduction with internal fixation of some type, with or without additional external fixation. Subsequently another method of fracture treatment, "double fixed traction," has been evolved. It consists of putting pins on each side of the fracture and connecting them with a cast or some type of apparatus. Examples are the Roger-Anderson and Stader methods. More recently a fifth type of fracture treatment, "sliding internal fixation," has been added. Intramedullary fixation is the chief way in which sliding internal fixation is used. It appears that this latest method is far more likely to revolutionize the treatment of certain fractures than other innovations have done.

This paper deals principally with (1) fractures of the femur treated with the Hansen-Street intramedullary femoral nail, (2) fractures of the forearm treated with intramedullary, half-threaded, heavy Steinman pins, and (3) fractures of the tibia treated with the slotted heavy Vitallium plate of Eggers, which he has called the "internal contact splint."

Other fractures of the long bones are amenable to sliding internal fixation. Many orthopedists treat fractures of the clavicle this way with excellent results anatomically and as far as early return of function is concerned. I have seldom found it necessary to treat fractures of the clavicle with intramedullary fixation since simpler methods usually work well. Some surgeons employ intramedullary fixation for fractures of the humerus; however, this method presents certain problems and I do not use it. The Smith-Petersen nail in the hip is really an example of sliding internal fixation, for as the fracture unites absorption at the fracture site occurs and the nail allows the ends to stay in contact.

It should be pointed out in this connection that the "contact compression factor" is important in the treatment of fractures. Eggers introduced the term and showed conclusively that bones which are slightly compressed in contact tend to unite much more rapidly than those which are not.

HISTORY

As is usually true with a so-called new method, a bone surgeon performed an operation similar to intramedullary fixation many years ago. Lambotte put a nail in the intramedullary canal of a clavicle in 1902. The use of small Steinman pins in elbows and forearms became popular in the 1920's and they have been used extensively since. Orr in 1931 used pins around joints employing the sliding internal fixation principle but adding to it external fixation. In this country in 1939 Rush began using intramedullary fixation in femurs and has used the method extensively ever since.

The great impetus to intramedullary fixation was given in Germany by Kuntscher, who introduced his method in 1940. He originally used it for the femur and later extended it to almost all of the long bones. Böhler found the method satisfactory and used it enthusiastically.

Street in 1947 reported the use of the diamond shaped nail in the shaft of the femur. I use the nail in the manner described originally by him and believe that it is probably the best device; a Kuntscher nail is not heavy enough. Although I have had no experience with the clover-leaf nail, it is my impression that it is somewhat more complicated.

HANSEN-STREET NAIL

Street reported a series of 100 cases in which the Hansen-Street nail was used with good results in fractures of the shaft of the femur. His statistical research was done carefully and represented consecutive cases of several physicians. The union in his series was 100 per cent.

Open reduction in the intramedullary nailing of fractures of the femur is advisable to do the procedure exactly, to save time, and to minimize shock. Another important factor is that many roentgen-ray exposures or much fluoroscopic examination is necessary for a closed reduction. Both methods of examination are too cumbersome and time consuming, and an open reduction is actually more conservative.

As soon as the fracture is opened a preliminary reduction is done to make sure how the bone pieces will fit together and to visualize the handling of any large comminuted fragments.

It is my usual practice to drill the medullary canal up through the trochanter, using a long extension drill 2 mm. smaller than the diameter of the pin. This procedure is followed to prevent the tip of the trochanter from being fractured as the nail leaves this region; however, Street and many others believe it is unnecessary.

The fracture is now ready to nail. A nail long enough to extend at least 5 inches past the fracture site is driven up the shaft of the femur until it is felt

Read before the Texas Railway and Traumatic Surgical Association, Annual Session, Fort Worth, May 1, 1950.

under the skin of the buttock. An incision is made in this area and the nail is driven farther upward until about .25 inch still protrudes at the fracture site. The fracture then is reduced accurately and held in position while the nail is driven back across the fracture site downward into the distal end of the femur. It is desirable to have only a small amount of the nail projecting above the trochanter, preferably between .5 and .75 inch. No cast is necessary after insertion of the nail.

If comminution is present and no major fragments can be held to maintain length, intramedullary nailing is not applicable. Comminuted fractures may be wired together and the nail then passed through bone fragments in certain instances. The question of how high or low a fracture may be and still be suitable for nailing has not been settled. It is my opinion that 4.5 inches from either end of the femur is the limit.

A possible complication is accidental bending of the nail during convalescence. Usually it may be straightened in a closed procedure under general anesthesia without undue difficulty.

The patient probably should bear a little but not much weight on the femur until there is roentgen-ray evidence of union; then he can begin to bear most or all of his weight on it. How long the nail should be left in is another controversial point. In the aged or debilitated, where it would seem undesirable to submit the patient to even a minor additional procedure, the nail may be left in with impunity. In younger, healthy persons it is believed that the nail should be removed in one or two years.

I use the original Hansen-Street nail slightly modified with an eye at each end so that the nail can be pulled out should it become stuck while being driven upward through the proximal fragment. The nail is diamond shaped in cross section. The instruments necessary for using the nail are three small fittings which may be screwed to the end of an ordinary Smith-Petersen nail director handle. One device has a hollow end which fits over the nail and is used as a driver. Another has a hook on the end and is used as a simple extractor. The third has a U-shaped end through which passes a heavy cotter pin; it is used for removing nails which have become stuck.

HALF-THREADED PINS

The principle used with half-threaded pins in forearm fractures is similar to that of the nail in fractures of the femur. Half-threaded pins are used so that they will not migrate either inward or outward; the threads engage in the cancellous bone at one of the bone ends. Smooth pins probably work almost as well, although there is a slight danger of their migration.

Probably intramedullary fixation is applicable only to fractures involving the middle half of the radius and ulna. Fractures near the ends of the bones are hard to hold in a stable position with the small round intramedullary pins now used.

The fracture first is opened and reduced. Closed reduction is not desirable because of reasons already mentioned. With the fracture open the pin is introduced from the end of the bone, not from the fracture site. In the radius it must be introduced with great accuracy extra-articularly and in the region of the styloid. In the ulna it must be introduced from the olecranon distalward, care being taken to avoid the elbow joint. A pin of correct length will project beyond the fracture site. Part of the smooth portion of the half-threaded pin is placed at the fracture site in order not to hold the bone ends apart. The threaded portion in the cancellous bone acts as an anchor for the pin. No cast is applied.

When to remove the pin or pins again is hard to decide. I usually leave them in about a year. In patients who have refused to have the pins removed no ill effects have been observed.

HEAVY SLOTTED PLATE

In the tibia sliding fixation is possible with the use of the heavy Vitallium plate with elongated or slotted holes. This plate, described by Eggers, is somewhat similar to a Lane plate in application. A number of important points must be borne in mind and an exacting technique employed, however, if the Vitallium plate is to work satisfactorily.

The fracture is opened and carefully reduced. A comminuted piece, if present, must be securely screwed with great accuracy to one of the major fragments. Much comminution precludes the use of the method. After accurate reduction of the fracture, a plate of suitable size is carefully bent until it exactly contours to the tibia where it is to be applied. This contouring must fit any slight curve in the tibia and any twisted or rotatory curve. This latter factor in the lower end of the tibia is especially important. The plate then is applied so as to allow the bone ends to meet but with plenty of opportunity to advance farther toward each other during union. In other words, the screws are placed in the slots more away from than toward the fracture site. After they are tightened securely, the screws are backed off slightly to allow a loose fit.

After the open reduction is accomplished a cast is applied as later the plate will tend to bend or the screws may pull out of the bone if sufficient stress is applied. The application of the cast is one of the disadvantages to the method. Union usually occurs promptly in comparison to other methods of treatment of fractures of the tibia.

COMMENT

It is my opinion that the Hansen-Street nail has revolutionized the treatment of fractures of the shaft of the femur and that it is by all odds the best method for most cases. Union in close to 100 per cent of cases may be expected if the procedure is done properly. The clover-leaf nail appears to be satisfactory also. The original Kuntscher nail has not worked well in this country.

The Hansen-Street nail may be used for a delayed union up to four to six months without a bone graft.

Considerable writing has been concerned with the so-called fluffy callus observed around fractures of the femur treated by intramedullary fixation. This callus is supposed to be soft and take a long time to consolidate. Although usually a large amount of callus forms, I have not seen any softness. Furthermore, if a dark line appears across the callus, weight bearing need not be prohibited; the fracture will unite.

The desirability and comfort to the patient of immediate ambulation is important in fractures of the femur. In fractures of the forearm, early use of the fingers is significant in achieving less residual stiffness.

The use of half-threaded pins in fractures of both bones of the forearm is satisfactory but not nearly as satisfactory as the use of the Hansen-Street nail in the femur. The method is not unduly difficult and a higher percentage of union is to be expected than with other procedures commonly in use.

The heavy slotted Vitallium plate of Eggers, the "internal contact splint," is wholly satisfactory in fractures of the tibia. Because of the danger of the plate bending or of the screws coming out, a cast must also be applied. The technique of applying the plate must be exact, especially in the accuracy of reduction and in the contouring of the plate to the shaft of the tibia. In my hands this method has worked better than any other type of treatment for fractures of the tibia. A high percentage of unions may be expected.

The ordinary Smith-Petersen nail may be regarded as a method of sliding internal fixation, since the fragments keep sliding together during union. This is not true, however, if the nail gives downward and the trochanter rides up so that the nail is horizontal When a bar or plate is screwed to the head of the nail and fastened also to the shaft of the femur with screws, the sliding effect becomes even more apparent.

SUMMARY

The Hansen-Street intramedullary nail represents a great improvement in the treatment of fractures of the femur. A high percentage of union occurs. The method is relatively simple and safe, although the technique must be correct. Immediate ambulation with crutches is possible, and residual stiffness is minimized.

The use of half-threaded Steinman pins in fractures of the forearm gives a higher percentage of good results than other methods commonly used. However, the method is not nearly as satisfactory as the intramedullary nail in the femur. Exacting adherence to technical requirements is necessary.

The heavy slotted Vitallium plate of Eggers is effective in fractures of the tibia. It must be applied accurately and then union will occur in a high percentage of cases.

These three methods represent examples of sliding internal fixation allowing continued end-to-end contact, which is a relatively new basic method of treating fractures. The contact compression factor, as described by Eggers, is important in promoting union.

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520 Montana Street.

ACTH, Cortisone, and Rheumatic Diseases

An international cooperative study of the effectiveness of the hormone substances ACTH and Cortisone in the treatment of rheumatic fever and the prevention of rheumatic heart disease will be undertaken by the American Council on Rheumatic Fever of the American Heart Association. The first long-term study of its kind, the survey will be conducted through a central coordinating center in New York and at twelve cooperating research centers in the United States, Canada, and Great Britain. The Council's Committee on Criteria and Standards headed by Dr. David D. Rutstein, professor of preventive medicine, Harvard Medical School, will coordinate the investigation in New York.

Starr County was created from Nueces County in 1848 and named for Dr. James Harper Starr, pioneer Texas surgeon, Indian fighter, and Secretary of the Treasury when Mirabeau B. Lamar was president of the Republic of Texas.

SURGICAL REPAIR OF SCARRING AND ULCERATION OF THE ANTERIOR TIBIAL SURFACE

CHARLES W. TENNISON, M.D., San Antonio, Texas

SCARRING and ulceration of the anterior tibial surface usually entails considerable morbidity and can be a source of disability for many years. In the past year I have operated on 6 patients for lesions existing for from a few months to twenty years.

Most of these scars and ulcers have resulted from osteomyelitis of the tibia either from compound fractures or of a hematogenous nature. The location of the lesion has occurred in the upper, middle, and lower thirds of the anterior tibial surface.

The disadvantages of using a free skin graft in the repair of defects of this area are well known. The blood supply is inadequate in most cases and although growth of the graft may be obtained in some instances, many of the grafts will subsequently ulcerate, resulting in a return of the disability.

For the repair of this type of lesion a double-ended flap of the lateral surface of the leg has been used. It is emphasized for its simplicity, dependability, and the shortness of time required when compared to flaps taken from farther afield.

TECHNIQUE OF OPERATION

Possibly the procedure can be done in one operation, but to date two stages have been employed as a precaution to ensure adequate blood supply in the double-ended flap.

An incision is made on the lateral surface of the leg, usually 3 to 4 inches from the anterior border of the tibia. This flap is then undermined over to the tibia and elevated (fig. 1a). Care is used in elevating the flap along the areolar tissue just superficial to the fascia over the muscle. After careful hemostasis the flap is returned to its original bed and sutured. After about a week the patient may be ambulatory, wearing a smooth compression bandage.

Approximately three weeks after the first operation the flap is again elevated, the scar and ulceration of the anterior tibial surface are excised, and the flap is shifted over the defect and sutured. The donor site of the flap is then covered by a free skin graft. By this procedure the scar is not over the anterior tibial surface.

Figure 1b shows the long scar over the anterior tibial surface resulting from simple excision and closure of a narrow defect. A scar so located is much more likely to give trouble in the future.

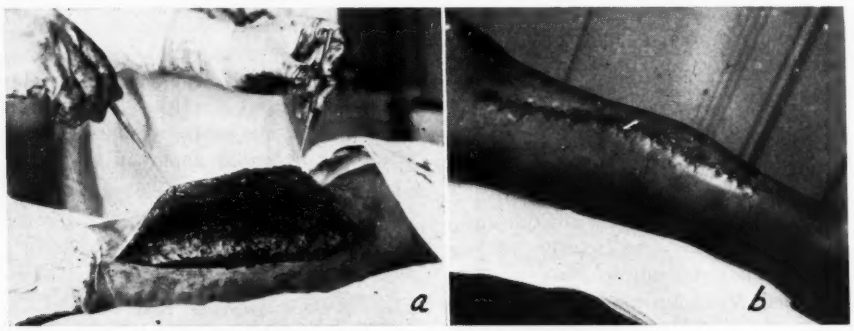

FIG. 1a. Delay of flap by undermining in the first operation to repair a lesion of the anterior tibial surface.

b. Bad location of scar following simple excision and closure.

CASE REPORTS

CASE 1.—A 14 year old boy had had a severe ulceration for eight years. Figure 2a shows the ulceration before surgery; figure 2b shows the healed flap; and figure 2c shows the healed skin graft of the donor site.

CASE 2.—A 15 year old boy had had an ulceration of four months' duration. A bone graft and screws are seen in figure 2d prior to surgery for repair. Figure 2e shows the wound after removal of the ulcer, necrotic bone, and screws. The flap and skin graft are shown in figure 2f. There is a small draining area which will probably make necessary further orthopedic attention. Any subsequent bone work will be greatly facilitated by the healthy tissue now over the bone.

CASE 3.—This case illustrates the use of the double-ended flap in an acute traumatic wound. The injury resulted in an avulsion of the soft tissues and a portion of the muscles of the leg (fig. 2g). The muscle area was covered by a free skin graft and the tibia by a flap (fig. 2h). The graft of the flap donor site is shown in figure 2i.

Read before the Section on Surgery, State Medical Association of Texas, Annual Session, Fort Worth, May 2, 1950.

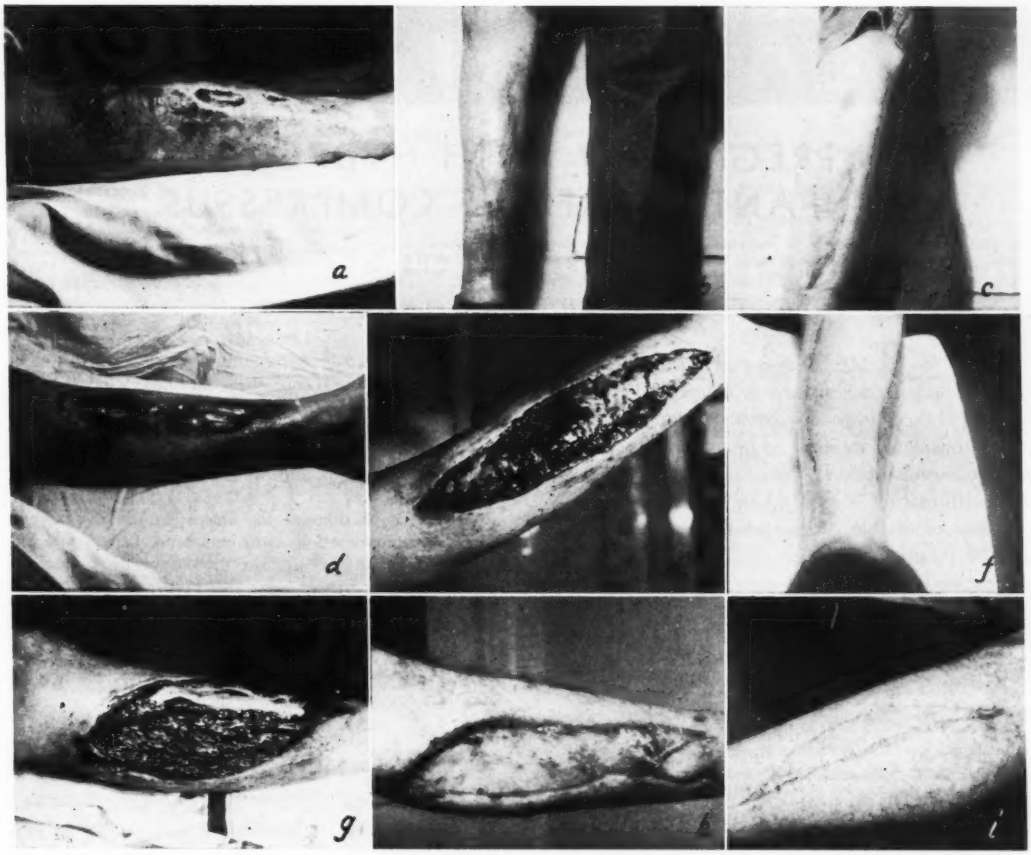

FIG. 2a. Case 1. Preoperative ulceration.
b. Case 1. Healed flap six months postoperatively.
c. Case 1. Healed graft of donor site.
d. Case 2. Ulceration showing bone graft and screws before flap repair.
e. Case 2. Excision and debridement
f. Case 2. Flap and donor skin graft. Small draining area one month postoperatively.
g. Case 3. Avulsion of skin and muscle exposing tibia.
h. Case 3. Healed graft over muscle and flap over tibia.
i. Case 3. Healed graft of donor site of flap.

CONCLUSION

A double-ended flap of the lateral surface of the leg is useful in the repair of lesions of the anterior tibial surface. It is advisable to use a two stage operation and to handle the flap carefully to prevent trauma.

Nix Professional Building.

SALINE ORALLY FOR BURN SHOCK

The Surgery Study Section of the National Institutes of Health has recommended the use of oral saline solutions as standard procedure in the treatment of shock due to burns and other injuries in the event of large-scale civilian disaster.

Dr. Carl Moyer, Dallas, a member of the Section, prepared the memorandum telling of the results from orally administered salt solutions in the treatment of burns at Parkland Hospital, Dallas, and two other hospitals. He has concluded from personal clinical experience that oral saline solutions are valuable adjunctive agents in the treatment of shock incident to burns, fractures, peritonitis, and acute anaphylactoid reactions. The Surgeon General of the U. S. Public Health Service has emphasized that the recommendation will not decrease the need for whole blood but that it might be included immediately as an emergency procedure in first aid training programs.

If profound peripheral circulatory collapse is present, saline solutions must be given intravenously until the peripheral blood flow has been reestablished. The salt solutions observed to be most satisfactory were Hartmann's solution or plasma. In addition to these, whole blood should be given concurrently to implement the effectiveness of salt solutions.

The most palatable salt solution, the memorandum states, is made by dissolving 3 to 4 Gm. of sodium chloride and 2 to 3 Gm. of sodium citrate in each liter of water; ordinary baking soda may be substituted for the sodium citrate. The concentration of salt should not be in excess of 140 milliequivalents of sodium per liter; with a higher concentration vomiting and diarrhea may result.

CASE REPORTS

TWIN PREGNANCY WITH HYDROCEPHALIC INFANT AND FETUS COMPRESSUS

Case Report

G. CON SMITH, M.D., Mexia, Texas

THE incidence of twins, which is said to occur once in 85.2 cases, is considered usually in chapters dealing with the pathology of pregnancy and thus is considered by some to be abnormal.[1] The incidence of complication is increased at multiple birth and malformation is more likely to occur.

A case of double ovum twins: the first, a hydrocephalic infant, and the second, a fetus compressus, is presented herewith. Of special interest was the hysterectomy which ultimately was necessitated by blood loss from the placental site of the compressed fetus.

CASE REPORT

Mrs. L. J., aged 32, a multipara with no pregnancy in twelve years, gave no evidence of any abnormality. The patient was stocky and obese with a weight of 185 pounds. Neither the patient nor I suspected that multiple pregnancy existed. No roentgenologic studies were made.

Labor began some four weeks previous to the calculated date of confinement. The patient was admitted to the hospital April 21, 1949, in active labor, and after twelve hours of normal labor, complete dilatation of the cervix was achieved. The only sedation was scopolamine 1/200 grains. Only after rupture of the membranes and complete dilatation was an abnormally sized cranium noted to exist. A low forceps delivery and right mesiolateral episiotomy were accomplished with only moderate difficulty. Breath sounds were immediate and spontaneous.

An intact placenta was delivered spontaneously three minutes later and carried with it a fetus compressus of about four or four and one-half months' development. The cord to the compressed fetus was a small white membrane containing no gross blood vessels and appeared to be continuous with the membranes. Spontaneous separation of the separate placenta was awaited; after 20 minutes the patient was redraped and manual removal was attempted. Only a hard, sharply demarcated nodulation was palpable on the lateral aspect of the uterine cavity, and no manner of manual manipulation lent success in separating this placenta from the uterus. Since there was little bleeding from the uterus and no blood vessels were discernible in the cord, oxytocics were administered and a conservative regimen was instituted.

The course of the puerperium was uneventful with the exception of foul lochia; no fever and no pain developed. The patient was dismissed on the fifth postpartal day.

On June 3, 1949, the patient had a massive uterine hemorrhage; she had had two episodes of moderate bleeding respectively ten days and four days previously. Conservative measures of sedation, oxytocics, and manual massage of the uterine fundus did not control the bleeding. Supportive therapy was instituted and on June 4 a dilatation and curettage did not yield any endometrium or placental tissue. A subtotal abdominal hysterectomy was done. The postoperative course was uneventful, and the patient was dismissed on the ninth postoperative day.

Grossly, cut sections of the uterus showed the placental site of the compressed fetus to be a hard, firm, white mass of scar tissue and from this site the uterine hemorrhage undoubtedly had occurred. There had been evidently complete absorption of the chorionic villi and fibrous network of the placental mass. Histologic examination of the sections was not done.

The hydrocephalic child lived eight months, and at death the cranial circumference was 26 inches.

DISCUSSION

Death of one of the fetuses in a multiple pregnancy is not uncommon. Quigley collected 109 cases. It is perhaps easier to understand how a moderate, congenital, internal hydrocephalic fetus could by virtue of the large mass of head encroach on the blood supply of the other fetus and completely occlude the vessels. Of interest in this particular case, however, is how the compressed fetus received nourishment, since it was not decomposed and since no blood vessels were seen in a gross dissection of the cord.

Of interest also is the possibility of placenta accreta. DeLee reported that there are only 118 authentic cases (Anderson).[1] In my patient hemorrhage was delayed until approximately six weeks post partum and was not immediate as in placenta accreta.

SUMMARY

A case of twin pregnancy complicated by two abnormal fetuses is presented. The case was distinguished by involution of the uterine placental site into a fibrous scar which gave rise to a uterine hemorrhage necessitating hysterectomy.

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216 North Sherman.

NEWS

COMING MEETINGS AND CLINICS

State Medical Association of Texas, Galveston, May 1-2, 1951. Dr. William M. Gambrell, Austin, Pres.; Tod Bates, 700 Guadalupe St., Austin, Executive Secy.

American Medical Association, Atlantic City, June 11-15, 1951. Dr. Elmer L. Henderson, Louisville, Ky., Pres.; Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secy.

NATIONAL AND REGIONAL

American Academy of Allergy, New York, Feb. 5-7, 1951. Dr. Walter S. Burrage, Milwaukee, Pres.; Mr. James O. Kelley, 208 E. Wisconsin Ave., Milwaukee 2, Executive Secy.

American Academy of Dermatology and Syphilology. Dr. Earl D. Osborne, Buffalo, N. Y., Pres.; Dr. John E. Rauschkolb, 25 Prospect Ave., N. W., Cleveland 15, Secy.

American Academy of General Practice, San Francisco, March 19-22, 1951. Stanley R. Truman, Oakland, Calif., Pres.; Mr. Mac F. Cahal, 406 W. 34th St., Kansas City 2, Executive Sec'y.

American Academy of Neurological Surgery. Dr. William S. Keith, Toronto, Canada, Pres.; Dr. T. C. Erickson, 1300 University Ave., Madison 5, Wis., Secy.

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 14-18, 1951. Dr. Derrick Vail, Chicago, Pres.; Dr. W. L. Benedict, 100 First Ave. Bldg., Rochester, Minn., Secy.

American Academy of Pediatrics, Toronto, Oct. 20-25, 1951. Dr. Paul W. Beaven, Rochester, N. Y., Pres.; Dr. C. G. Grulee, 636 Church St., Evanston, Ill., Secy.

American Association for Thoracic Surgery, Atlantic City, N. J., April 16-18, 1951. Dr. Alfred Blalock, Baltimore, Pres.; Dr. Brian Blades, 901 23rd St. N. W., Washington, D. C., Secy.

American Association of Genito-Urinary Surgeons, Skytop, Pa., May 16-18, 1951. Dr. Roger C. Graves, Boston, Pres.; Dr. Norris J. Heckel, 122 S. Michigan Ave., Chicago 3, Secy.

American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, Hot Springs, Va., Sept. 6-8, 1951. Dr. James K. Quigley, Rochester, N. Y., Pres.; Dr. William F. Mengert, 2211 Oak Lawn Ave., Dallas, Secy.

American Cancer Society. Dr. Guy Aud, Louisville, Ky., Pres.; Mr. M. R. Runyon, 47 Beaver St., New York, Exec. Vice-Pres.

American College of Allergists, Chicago, Feb. 11-14, 1951. Dr. John H. Mitchell, Columbus, Ohio, Pres; Dr. Fred W. Wittich, 423 La Salle Medical Building, Minneapolis 2, Secy.

American College of Chest Physicians, Atlantic City, N. J., June 7-10, 1951. Dr. Louis Mark, Columbus, Ohio, Pres.; Mr. Murray Kornfeld, 500 N. Dearborn St., Chicago 10, Executive Secy.

American College of Physicians, St. Louis, April 9-13, 1951. Dr. William S. Middleton, Madison, Wis., Pres.; Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Secy.

American College of Radiology, Atlantic City, June 10, 1951. Dr. C. Edgar Virden, Kansas City, Mo., Pres.; Mr. W. C. Stronach, 20 N. Wacker Drive, Chicago 6, Executive Secy.

American College of Surgeons San Francisco Nov. 5-9, 1951. Dr. Henry W. Cave, New York, Pres.; Dr. Paul B. Magnuson, 40 E. Erie St., Chicago 11, Secy.

American Congress of Physical Medicine, Denver, Sept 3-8, 1951. Dr. Arthur L. Watkins, Boston, Pres.; Dr. Richard Kovacs, 2 E. 88th St., New York 28, Secy.

American Dermatological Association, Hot Springs, Va., May 23-26, 1951. Dr. Henry E. Michelson, Minneapolis, Pres.; Dr. L. A. Brunsting, 102 2nd Ave., S. W., Rochester, Minn, Secy.

American Gastro-Enterological Association, Atlantic City, June 8-9, 1951. Dr. John G. Mateer, Detroit, Pres.; Dr. Dwight L. Wilbur, 655 Sutter St., San Francisco, Secy.

American Gynecological Society, New York, May 7-9, 1951. Dr. Frederick Irving, Brookline, Pres.; Dr. Norman F. Miller, 1313 E. Ann St., Ann Arbor, Mich., Secy.

American Hospital Association. Dr. Charles F. Wilinsky, Boston, Pres.; Mr. George P. Bugbee, 18 E. Division St., Chicago, Executive Secy.

American Laryngological, Rhinological, and Otological Society, White Sulphur Springs, W. Va., May 6-8, 1951. Dr. Gordon B. New, Rochester, Minn., Pres.; Dr. Louis H. Clerf, 1530 Locust St., Philadelphia, Secy.

American Neurological Association, Atlantic City, June 18-20, 1951. Dr. Wilder Penfield, Montreal, Canada, Pres.; Dr. H. Houston Merritt, 710 W. 168th St., New York 32, Secy.

American Ophthalmological Society, White Sulphur Springs, W. Va., June 7-9, 1951. Dr. John H. Dunnington, New York, Pres.; Dr. M. C. Wheeler, 30 W. 59th St., New York 19, Secy.

American Orthopedic Association, White Sulphur Springs, W. Va., June 20-23, 1951. Dr. James S. Speed, Memphis, Pres.; Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secy.

American Pediatric Society, Atlantic City, May 2-5, 1951. Dr. Bronson Crothers, Boston, Pres.; Dr. Henry G. Poncher, 1819 W. Polk St., Chicago 12, Secy.

American Proctologic Society, Atlantic City, June 7-10, 1951. Dr. Hoyt R. Allen, Little Rock, Pres.; Dr. W. Wendell Green, 1838 Parkwood Ave., Toledo 2, Secy.

American Psychiatric Association, Cleveland, May 7-11, 1951. Dr. John C. Whitehorn, Baltimore, Pres.; Dr. R. Finley Gayle, 501 E. Franklin St., Richmond, Va., Secy.

American Public Health Association. Dr. W. P. Shepard, San Francisco, Pres.; Dr. R. M. Atwater, 1790 Broadway, New York 19, Secy.

American Society of Anesthesiologists, Washington, D. C., Nov. 5-8, 1951. Dr. Urban H. Eversoll, Boston, Pres.; Dr. J. E. Remlinger, Jr., 188 W. Randolph St., Chicago, Secy.

American Society of Clinical Pathologists, Chicago, Oct. 13-20, 1951. Dr. F. William Sundermann, Atlanta, Ga., Pres.; Dr. Clyde G. Culbertson, Indiana University School of Medicine, Indianapolis, Secy.

American Surgical Association, Washington, D. C., April 11-13, 1951. Dr. Samuel C. Harvey, New Haven, Conn., Pres.; Dr. Nathan Womack, University of Iowa, Iowa City, Secy.

American Urological Association, Chicago, May 21-24, 1951. Dr. Thomas D. Moore, Memphis, Tenn., Pres.; Dr. C. H. deT. Shivers, 121 S. Illinois Ave., Atlantic City, N. J., Secy.

Association of American Physicians and Surgeons, Indianapolis, Oct. 4-6, 1951. Dr. Lawerence Shinabery, Fort Wayne, Ind., Pres.; Mr. Harry E. Northam, 360 N. Michigan Ave., Chicago 1, Executive Secy.

International College of Surgeons, U. S. Chapter, Chicago, Sept. 11-14, 1951. Dr. Custis Lee Hall, Washington, D. C., Pres.; Dr. Arnold S. Jackson, 1516 Lake Shore Drive, Chicago, Secy.

National Tuberculosis Association, Cincinnati, May 14-18, 1951. Dr. David T. Smith, Durham, N. C., Pres.; Dr. H. Stuart Willis, 1790 Broadway, New York 19, Secy.

Radiological Society of North America, Chicago, Dec. 3-7, 1951. Dr. John S. Bouslog, Denver, Pres.; Dr. D. S. Childs, Medical Arts Bldg., Syracuse 2, N. Y., Secy.

Southern Medical Association, Dallas, Nov. 5-8, 1951. Dr. Curtice Rosser, Dallas, Pres.; Mr. C. P Loranz, 1020 Empire Bldg., Birmingham, Ala., Secy.

Southern Psychiatric Association. Dr. R. Burke Suitt, Durham, N. C., Pres.; Dr. Newdigate M. Owensby, Medical Arts Bldg., Atlanta, Ga., Secy.

Southern Surgical Association, Hot Springs, Va., Dec. 4-6, 1951. Dr. Frank C. Wilson, Birmingham, Ala., Pres.; Dr. John C. Burch, 2112 West End Ave., Nashville, Tenn., Secy.

Southwest Allergy Forum, San Antonio, April 8-10, 1951. Dr. J. H. W. Rouse, San Antonio, Pres.; Dr. Boen Swinny, 224 Medical Arts Bldg., San Antonio 5, Secy.

Southwest Regional Cancer Conference. Secy., 209 Medical Arts Bldg., Fort Worth.

Southwestern Medical Association, El Paso, Fall, 1951. Dr. L. W. Breck, El Paso, Pres.; Dr. Wickliffe R. Curtis, First National Bank Bldg., El Paso, Secy.

Southwestern Surgical Congress, St. Louis, Sept. 24-26, 1951. Dr. Leo J. Starry, Oklahoma City, Pres.; Dr. C. R. Rountree, 1227 Classen, Oklahoma City 3, Secy.

Tri-State Medical Assembly. Dr. W. S. Terry, Jefferson, Pres.; Dr. James Harris, Marshall, Secy.

United States-Mexico Border Public Health Association, Los Angeles, April 4-6, 1951. Dr. Luis Arriaga Velez, Chihuahua, Mexico, Pres.; Dr. M. F. Haralson, 314 U. S. Court House, El Paso, Secy.

STATE

Texas Academy of General Practice, Houston, September 10-11, 1951. Dr. Andrew S. Tomb, Victoria, Pres.; Dr. B. H. Bayer, 104 E. Twentieth St., Houston, Secy.

Texas Academy of Internal Medicine, Galveston, December, 1951. Dr. W. L. Marr, Galveston, Pres.; Dr. John S. Chapman, 3810 Swiss Ave., Dallas, Secy. Meetings restricted to members.

Texas Air-Medics Association, Galveston, April 30, 1951. Dr. D. P. Laugenour, Dallas, Pres.; Dr. C. F. Miller, 906 Medical Arts Bldg., Waco, Secy.

Texas Association of Obstetricians and Gynecologists, Galveston, Feb. 9-10, 1951. Dr. Howard Smith, Marlin, Pres.; Dr. George F. Adam, 4115 Fannin, Houston, Secy.

Texas Chapter, American College of Chest Physicians, Galveston, April 30, 1951. Dr. David McCullough, Kerrville, Pres.; Dr. Henry R. Hoskins, 514 Medical Arts Bldg., San Antonio, Secy.

Texas Club of Internists. Dr. Ghent Graves, Houston, Pres.; Dr. Hatch W. Cummings, Jr., Houston, Secy.

Texas Dermatological Society, Galveston, April 30, 1951. Dr. J. G. Brau, Dallas, Pres.; Dr. W. Harris Connor, 601 Medical Arts Bldg., Houston, Secy.

Texas Diabetes Association, Galveston, April 29, 1951. Dr. B. F. Smith, Houston, Pres.; Dr. W. N. Powell, W. Ave. F, Temple, Secy.

Texas Division, American Cancer Society, Fall, 1951. Mr. Frank C. Smith, Houston, Pres.; Mr. J. Louis Neff, 2307 Helena St., Houston 6, Executive Director.

Texas Heart Association, Galveston, April 30, 1951. Dr. George W. Parson, Texarkana, Pres.; Miss Roberta Miller, 411 Reserve Loan Life Bldg., Dallas, Executive Secy.

Texas Hospital Association, San Antonio, April 24-26, 1951. Mr. Roy Wilmesmeier, Houston, Pres.; Mrs. Ruth Barnhart, 2210 Main St., Dallas, Secy.

Texas Neuropsychiatric Association, Galveston, April 30, 1951. Dr. Martin L. Towler, Galveston, Pres.; Dr. James Blair, San Antonio, Secy.

Texas Orthopedic Association, Galveston, April 30, 1951. Dr. Louis Breck, El Paso, Pres.; Dr. Margaret Watkins, 3629 Fairmount St., Dallas, Secy.

Texas Pediatric Society, Houston, October, 1951. Dr. Thomas D. McCrummen, Austin, Pres.; Dr. M. C. Carlisle, 1410 Austin Ave., Waco, Secy.

Texas Public Health Association, Galveston, Feb. 18-21, 1951. Mr. Barnie A. Young, Austin, Pres.; Mr. Earle W. Sudderth, Dallas County Health Department, Court House, Dallas, Executive Secy.

Texas Radiological Society, Curtis H. Burge, Houston, Pres.; Dr. R. P. O'Bannon, 650 Fifth Ave., Fort Worth, Secy.

Texas Railway and Traumatic Surgical Association, Galveston, April 30, 1951. Dr. R. J. White, Fort Worth, Pres.; Dr. W. F. Parsons, First National Bank Bldg., Fort Worth, Secy.

Texas Rheumatism Association, Galveston, December, 1951. Dr. G. W. N. Eggers, Galveston, Pres.; Dr. Robert H. Mitchell, 210 Medical Arts Bldg., Fort Worth, Secy.

Texas Society for Mental Health, Galveston, March 8-9, 1951. Dr. Hamilton Ford, Galveston, Pres.; Mrs. Elizabeth F. Gardner, 1617 Watchhill Road, Austin 21, Executive Secy.

Texas Society of Anesthesiologists. Galveston, April 30, 1951. Dr. Russell Bonham, Houston, Pres.; Dr. Werner Hoeflich, 2301 Reba, Houston, Secy.

Texas Society of Gastroenterologists and Proctologists, Galveston, April 30, 1951. Dr. Carl G. Giesecke, San Antonio, Pres.; Dr. John S. Bagwell, Medical Arts Bldg., Dallas, Secy.

Texas Society of Ophthalmology and Otolaryngology, Austin, 1951. Dr. Edward D. Dumas, San Antonio, Pres.; Dr. Lyle Hooker, 627 Esperson Bldg., Houston, Secy.

Texas Society of Pathologists. Dr. Charles Phillips, Temple, Pres.; Dr. A. O. Severance, 205 Camden, San Antonio, Secy.

Texas Surgical Society, Galveston, April 2-3, 1951. Dr. Edward White, Dallas, Pres.; Dr. Truman G. Blocker, 927 Strand, Galveston, Secy.

Texas Tuberculosis Association, Dallas, April 13-14, 1951. Dr. Elliott Mendenhall, Dallas, Pres.; Miss Pansy Nichols, 208 E. Ninth, Austin, Executive Secy.

Texas Urological Society, Dallas, 1952. Dr. William H. Heck, San Antonio, Pres.; Dr. J. D. Mitchell, 1414 Medical Arts Bldg., Dallas, Secy.

DISTRICT

Second District Society, Midland, March 13, 1951. Dr. James W. Rainer, Odessa, Pres.; Dr. Frank M. James, 1021 N. Whitaker Ave., Odessa, Secy.

Third District Society, Amarillo, April 10-11, 1951. Dr. Allen T. Stewart, Lubbock, Pres.; Dr. James T. Hall, 1302 Avenue Q, Lubbock, Secy.

Fourth District Society, Brady, November, 1951. Dr. S. Braswell Locker, Brownwood, Pres.; Dr. B. A. Hallum, Brady, Secy.

Fifth and Sixth Districts Society, Corpus Christi, July 6-7, 1951. Dr. E. King Gill, Corpus Christi, Pres.; Dr. Foy Moody, 1611 Fifth St., Corpus Christi, Secy.

Seventh District Society, Austin, Feb. 21, 1951. Dr. John F. Thomas, Austin, Pres.; Dr. George W. Tipton, 502 W. 15, Austin, Secy.

Eighth District Medical Society, March 23-24, 1951. Dr. Leonard Johnson, El Campo, Pres.; Dr. Robert Casey, Texas City, Secy.

Ninth District Society. Dr. L. E. Bush, Huntsville, Pres.; Dr. Lyman C. Blair, 1212 Rothwell, Houston, Secy.

Tenth District Medical Society, Port Arthur, March 3, 1951. Dr. A. J. Richardson, Sr., Jasper, Pres.; Dr. L. C. Heare, 221 Bluestein Bldg., Port Arthur, Secy.

Eleventh District Society, Henderson, March 22, 1951. Dr. Griff T. Ross, Mount Enterprise, Pres.; Dr. John M. Travis, Jr., Jacksonville, Secy.

Twelfth District Society, Bryan, July 10, 1951. Dr. S. C. Richardson, Bryan, Pres.; Dr. J. C. Terrell, Stephenville, Secy.

Thirteenth District Society. Dr. R. L. Daily, Wichita Falls, Pres.; Dr. S. W. Wilson, Medical Arts Bldg., Fort Worth, Secy.

Fourteenth District Society, Bonham, June 12, 1951. Dr. Mayo Tenery, Waxahachie, Pres.; Dr. L. W. Johnston, 502 W. College St., Terrell, Secy.

Fifteenth District Society, 1951. Dr. R. G. Granbery, Marshall, Pres.; Dr. H. O. Padgett, Marshall, Secy.

CLINICS

Dallas Southern Clinical Society, Dallas, March 26-29, 1951. Miss Betty Elmer, Medical Arts Bldg., Dallas 1, Executive Secy.

International Post-Graduate Medical Assembly of Southwest Texas. San Antonio, 1952. Dr. John J. Hinchey, P. O. Box 2445, San Antonio, Secy.

New Orleans Graduate Medical Assembly, New Orleans, March 5-8, 1951. Dr. Woodard D. Beacham, Room 105, 1430 Tulane Ave., New Orleans 12, Secy.

North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls, Sept. 19, 1951. Dr. W. L. Powers, Hamilton Bldg., Wichita Falls, Chairman.

Oklahoma City Clinical Society Conference, Oklahoma City, Oct. 29-Nov. 1, 1951. Mrs. Muriel R. Waller, 512 Medical Arts Bldg., Oklahoma City 2, Executive Secy.

Post Graduate Medical Assembly of South Texas, Houston, July 23-25, 1951. Dr. Donald M. Paton, Secy., 229 Medical Arts Bldg., Houston.

NEW ORLEANS GRADUATE ASSEMBLY

The New Orleans Graduate Medical Assembly will meet March 5-8 at the Municipal Auditorium, New Orleans. The program will include discussions on ACTH and cortisone, trauma and neoplastic disease, application of radioactive isotopes in medical practice; clinico-pathologic conference; round-table luncheons; and a color telecast of medical and surgical procedures. These features are covered in the $15 registration fee. Assembly visitors also may participate in a tour of Panama, Colombia, Ecuador, and Peru designed especially for them and beginning March 10.

Speakers at the assembly meeting will include Drs. George S. Baker, Rochester, Minn., neurosurgery; Arlie R. Barnes, Rochester, Minn., medicine; Marshall Brucer, Oak Ridge, Tenn., atomic medicine; Jerome W. Conn, Ann Arbor, endocrinology; Austin I. Dodson, Richmond, Va., urology; Paul C. Hodges, Chicago, radiology; John L. McKelvey, Minneapolis, gynecology; John M. McLean, New York, ophthalmology; Henry B. Orton, Newark, N. J., otolaryngology; Newell W. Philpott, Montreal, Canada, obstetrics; Donald M. Pillsbury, Philadelphia, dermatology; H. Marvin Pollard, Ann Arbor, gastroenterology; Theron G. Randolph, Chicago, allergy; Stanley P. Reimann, Philadelphia, pathology; Cornelius P. Rhoades, New York, medicine; Harold A. Scofield, Chicago, orthopedic surgery; Alfred V. Stoesser, Minneapolis, pediatrics; Charles S. Welch, Boston, surgery; and Nathan Womack, Iowa City, surgery.

Inquiries may be addressed to the Secretary, Room 103, 1430 Tulane Avenue, New Orleans 12.

MEDICAL OFFICER PROCUREMENT CLARIFIED

A conference in Washington of state advisory committees to the National Advisory Committee to the Selective Service System in mid-January clarified many of the points which have been in question since passage of the doctor draft law last autumn. Dr. R. A. Trumbull, Dallas, chairman of the Texas State Advisory Committee; Dr. Carl B. Holder, the dentist member from Cuero; and Tod Bates, Austin, executive secretary, returned from the conference to announce that the State Advisory Committee is now cloaked with federal authority, with federal funds allocated to pay for travel, stationery, telephones, and some clerical help. County advisory committees (formerly procurement and assignment committees) as an extension of the state committee will share the authority, but their recommendations and actions must be channeled through the state committee.

A detailed digest of information coming from the Washington conference has been mailed to every member of the State Medical Association. Most of the material is repeated here for permanent reference.

It has been pointed out that there is a great difference between doctors with reserve commissions and doctors who registered under the doctor draft law but have not applied for commissions. The State Advisory Committee has far more authority with respect to reservists, and its members are recommending that all registrants in Priorities 1 and 2 apply at once for reserve commissions if they have not already done so. Acceptance of a commission does not necessarily mean immediate active duty. A commission prior to active duty, in addition to allowing the State Advisory Committee greater jurisdiction, assures a physician of $100 per month extra pay. If he is inducted by Selective Service as an enlisted man, the doctor receives no bonus and may even not be assigned to a medical unit.

Priorities

The following, in brief, is a definition of each priority as established by the doctor draft law (Public Law 779): *Priority* 1: Doctors who were deferred from military service in World War II to complete their education and those who were trained at government expense (ASTP or V-12), with less than 90 days' military service; *Priority* 2: Doctors who were deferred from military service in World War II to complete their education and those who were trained at government expense (ASTP or V-12), with more than 90 days' and less than 21 months' service; *Priority* 3: Doctors under 50 years of age who have not seen military service since September 16, 1940; *Priority* 4: Reserve medical officers, National Guard officers (medical), and others eligible who do not fall within the first three priorities.

If a doctor does not fall in Priority 1 or 2, but has had service (no set length or branch) in the armed forces since September 16, 1940, he falls in Priority 4. The law is confusing on this subject and will probably be clarified when a new law is presented prior to July 1 of this year.

It is understood that reserve and National Guard medical, dental, and veterinary officers are not subject to draft under Public Law 779. However, to establish broadly the order in which these reserve and National Guard officers with more than 21 months' service since 1940 may expect calls to active duty, they have been referred to as falling in Priority 4. Exceptions could be cases where such officers are regularly assigned to organized reserve or National Guard units.

A definite policy has been established that succeeding priorities will not be utilized until the preceding priority or category has been exhausted.

The armed forces will require 9,000 additional physicians by July 1. There are far less than that number available in Priority 1. This means that practically all eligible physicians available in Priority 1 will be called to active duty prior to July 1, and an appreciable number will probably be called from Priority 2 by July 1.

There are probably a few doctors in Priorities 1 and 2 who should be deferred temporarily. Among these are doctors in Priority 1 who are the only doctors in an unusually large population area. However, these must be replaced by doctors in higher priorities and it is likely that such replacements will be made within six months.

Registrants in Priority 1, except those who apply for regular commissions, will not be assigned to the Navy or Air Force until current Army requirements are met.

Reserves

Armed services authorities have requested the State Advisory Committee to review records of all reserve medical officers in Texas who have not yet been called to duty. Names and addresses of these reserve officers will be furnished the State Advisory Committee, which in turn will forward the names of such officers to local advisory committees established in the areas where the officers reside. County advisory committees should then determine the order in which such reserve officers should be called to active duty, giving due consideration to length of prior service, essentiality to the community, and so forth, and the reservist should be so notified. All reserve medical officers have the right to appeal recommendations of local committees to the State Advisory Committee, which is the final authority for recommendations as to the order in which reserve officers are selected for active duty.

No Army reserve medical officer will be ordered to active duty until his "essential" status has been cleared by the State Advisory Committee. This committee will consider recommendations from local advisory committees in arriving at its decisions. Deferment of Navy medical reservists will be determined by the Deferment Board, Bureau of Medicine and Surgery, U. S. Navy. Public Health Service officers are under the jurisdiction of the Surgeon General of the Public Health Service. The Air Force has not announced its policy.

When a reserve medical officer is called to duty and asks for delay in reporting, such delay will not exceed one year, unless the circumstances are exceptional.

Who Are Reserves?—This question has been brought up numberless times: Are physicians who served as medical officers in World War II with AUS commissions still considered "reserve" officers?

The confusion here arises because certain components of the armed forces take the position that these AUS medical officers in signing their oaths of office agreed to serve for the period of the emergency plus six months, and the emergency has not been declared officially ended.

This is a question which high officials in Washington, including Selective Service officials, are not prepared to answer. Medical officers who held AUS commissions during the war and who otherwise were not required to register on October 16 were required to register on January 15. If and when such officers are called to active duty, will their AUS commissions remain in effect, and will they enter service with the grade they held when discharged? Officials cannot answer this question and state it will be clarified when the new law to supersede Public Law 779 is written.

A doctor who held a reserve commission in the armed forces should and must clarify his own position. Ordinarily, most doctors know whether or not they hold reserve commissions. At present, there is no distinction between an "active" or "inactive" reserve commission. Doctors holding reserve commissions, regardless of whether they are assigned to any organized reserve unit and regardless of the branch of

service in which such commission is held, are not required to register at any time, under the provisions of the doctor draft law. Actually, some qualified, licensed doctors hold current active reserve commissions in infantry, as air corps pilots, and in other branches of the service. Obviously, an officer can hold only one commission at a time, and if such doctors are ordered to active duty, they will be assigned to the component in which their reserve commission is held. At present, reserve commissions are automatically renewed every five years, whether or not the holder of such commission has engaged in any type of active duty, attended troop schools or Army or Navy correspondence schools, and is or is not assigned to any numbered reserve component.

Registrants Under Draft Law

Those in Priorities 1 and 2 who registered on October 16 and stated on their registration blanks that they did not desire a reserve commission should immediately contact the board with which they are registered and change this declaration, requesting a reserve commission. Most of these will be called by June 30.

The State Advisory Committee will shortly be furnished with a list of those registrants in this priority and will contact them direct with additional information, suggesting that they apply for reserve medical commissions. Those who do not so apply and are physically and otherwise qualified will be inducted as privates and there is no indication that they will be assigned to medical units after induction. If commissioned after induction, such officers will *not* receive the additional $100 per month pay.

Information cards on those registering January 15 will be sent out in triplicate in order to evaluate each of these new registrants' abilities and capacities. Hospitals will fill out cards on staff members. All information regarding registrants is being decentralized to the local level as far as possible.

Special Groups

Interns and Residents.—There are approximately 14,000 registrants in Priority 1, of which approximately 9,000 are interns and residents, and the remaining 5,000 are in private practice, research, and so forth. Practically all doctors in Priorities 1 and 2 must expect to serve very soon.

All interns in Priority 1 who are physically qualified will undoubtedly be called into service immediately upon completion of their internships and should apply for commissions at once.

Certain residents in the so-called "scarcity specialist" field may be deferred temporarily if they are in their last year of residency. These broadly are in the fields of psychiatry, pathology, neurology, anesthesiology, rehabilitation, and public health. Residents in these fields will be given every possible opportunity to pursue their residencies as members of the armed forces. The so-called scarcity specialty field does not include surgery, internal medicine, obstetrics and gynecology, and so forth.

The question has been raised as to how civilian hospitals can meet their needs for residents and interns. Aside from new graduates, some of these needs can be met from Priorities 3 and 4, and civilian doctors practicing in such hospitals will probably have to do considerably more hospital work which is now being done by residents and interns. Authorities predict there will be a cut of at least 25 per cent in the number of interns and residents in civilian hospitals in the almost immediate future.

Teachers.—Military and Selective Service officials are well aware of the many shortages which exist on faculties of medical schools. Everything possible will be done to retain essential faculty members in their present status. However, part-time instructors and occasional lecturers cannot be deferred for this reason alone. It is suggested that school administrators make surveys and recommendations. There is little likelihood that many registrants in Priorities 1 and 2 will be found as full-time members of medical school faculties and unless the case is exceptional, such faculty members probably would be required to serve.

Executives.—The question has been raised as to the deferment of doctors holding executive posts with hospitals, Blue Cross, Blue Shield and other nonprofit health insurance agencies, and so forth. The deferment of such personnel will in no event exceed twelve months.

Alien Doctors.—Practically no alien doctors who are engaged in active practice in the United States will be exempt from registering under the provisions of Public Law 779. Alien interns and some residents will be exempt. Authorities take the position that if an alien doctor is practicing in the United States and being paid therefor by private patients, he must register and if physically qualified probably will be called, even though he has not declared his intention of seeking first citizenship papers.

Public Health Officers.—Doctors employed by the Public Health Service are not exempt. They can apply for commissions in the regular United States Public Health Service, where tanks, grades, and pay are similar to those of the armed forces.

Researchers.—Doctors eligible for service who are engaged in research will be screened carefully. Each project represents an individual case, and the State Advisory Committee will be required to pass on deferment of researchers. These regulations apply to the doctor heading the research project as well as those working under him.

Premedical and Predental Students.—The premedical, predental student program is not definitely crystallized. There are approximately 75,000 students in these categories at present. Most of these will be deferred until the end of the current year's school term. Those accepted as students in class A medical and dental schools will undoubtedly receive deferment to complete their medical and dental educations. Students who can immediately offer definite proof of acceptance in a class A medical or dental school for the 1951 term will also probably be deferred. Rules governing these students are already well known by medical and dental schools and state and local draft boards.

GI Bill Students.—The so-called GI Bill of Rights under which some veterans have studied medicine and dentistry has no relation to or bearing on Public Law 779, the so-called "doctor draft" law.

Doctors with Physical Defects.—Doctors who were classified as 4F during the last war are considered to have been deferred because they were 4F and not because they were engaged in the study of medicine or dentistry.

Some doctors who registered on October 16 and failed to pass the physical examination have been informed by military authorities that they would not be called to duty for this reason. Many of these doctors may feel that they will never be called for active duty, and some may make plans for financial commitments accordingly. Physical requirements for commissions for medical officers may be down-graded at any time, and unquestionably some of these doctors who were turned down for physical reasons in the first instance may be reevaluated at a later date and meet the lowered physical standards. They should give consideration to this fact before committing themselves financially or otherwise, and not consider letters which they have received from military authorities as perpetual deferment.

Nurses.—Nurses are badly needed and plans are now being worked out to secure as many as possible for the Department of Defense. Many nurses holding reserve commissions will undoubtedly be called in the very near future.

Osteopaths.—The Department of Defense at present has expressed no requirement for osteopaths in the commissioned medical corps.

Coming Legislation

The Washington conference developed discussion of some interesting legislation which will be presented to the Congress in the immediate future.

The Congress will be asked to amend and extend the provisions of the present Public Law 779 (the doctor draft law) to July, 1953, and to extend the present 21-month period for inductees to 27 months, retroactive.

The Congress has been asked to pass a draft law covering all males aged 18 years for an initial period of 27 months' service. Participants in the conference were told that this draft would cover *all* male citizens aged 18, and those who were physically unqualified for military service would be drafted and turned over to nonmilitary agencies for 27 months of "national service." Officials who conducted the conference could not offer any further definition of "national service."

If the 18-year-olds are drafted, a civilian advisory group will nominate a certain number of these to be sent to college, and in considering their qualifications, will also consider those who have three to six months' military service. Those who drop out of school for any reason will still be required to serve 27 months. Those who complete their education are obligated for six years and must serve a minimum active duty tour of 27 months. An overall student program is now being worked out by government authorities.

TEXAN ON ARMED FORCES MEDICAL POLICY COUNCIL

Dr. James P. Hollers, San Antonio dentist, has been named one of three civilian professional men on the seven member Armed Forces Medical Policy Council. This council will advise the Department of Defense on the number of reserve physicians, dentists, and veterinarians who may be called to active duty at any one time without endangering the health of the civilian population.

Texas Urological Society

The annual meeting of the Texas Urological Society was held in San Antonio on January 22 with the following scientific program:

Hyperparathyroidism in Renal Stone Disease—Dr. G. M. Coffman, San Antonio.
Advances in Drug Therapy as Applied to Urology—Dr. Andres Goth, Southwestern Medical School, Dallas.
Testicular Tumors—Dr. A. O. Severance, San Antonio.
Bladder Tumors—Dr. W. W. Scott, Johns Hopkins Medical School, Baltimore.
Pyelogram Clinic.

A cocktail party the evening preceding the meeting and a luncheon and dinner on the day of the meeting provided entertainment.

Dr. William H. Heck, San Antonio, was elected president and Dr. J. D. Mitchell, Dallas, secretary. The next meeting will be held early in 1952 in Dallas.

NEUROPSYCHIATRIC CONFERENCE IN LITTLE ROCK

The third annual neuropsychiatric meeting of the Veterans Administration Hospital, North Little Rock, has been scheduled for March 1 and 2, with a special conference for nurses February 28. Interested physicians, nurses. psychologists, and social workers are invited to register without charge for the lectures, exhibits, and clinical demonstrations.

Guest speakers will include Drs. Crawford N. Baganz, Lyons, N. J.; Edwin F. Gildea, St. Louis; Edward D. Greenwood, Topeka, Kan.; Jules H. Masserman, Chicago; Saul Rosenzweig, St. Louis; Edward J. Stieglitz, Washington; Harvey J. Tompkins, Washington; and Harold G. Wolff, New York; Miss Elizabeth S. Bixler, dean of Yale University School of Nursing, New Haven; and the Rev. Harold Wilke, Chicago.

Further information may be obtained by writing to Dr. Ewin S. Chappell, director of professional education at the hospital, which this year is observing its thirtieth anniversary.

DALLAS SOUTHERN CLINICAL SOCIETY CONFERENCE

The twentieth annual spring clinical conference of the Dallas Southern Clinical Society will be held March 26-29 in Dallas with the Adolphus and the Baker Hotels as headquarters.

An all-inclusive fee of $20 will permit the registrant to attend the general assemblies, clinics, round-table luncheons, symposiums, and clinical-pathological conference at which out of state guests will be presented, and also the annual clinic dinner, postgraduate lectures by Dallas physicians, motion picture exhibits, and commercial displays.

Dr. Elmer L. Henderson, Louisville, Ky., President of the American Medical Association, will be a special speaker. Other guest lecturers will include Drs. Allan C. Barnes, Columbus, Ohio, obstetrics and gynecology; Katherine Dodd, Cincinnati, pediatrics; Austin I. Dodson, Richmond, Va., urology; Aubrey O. Hampton, Washington, radiology; Deryl Hart, Durham, N. C., surgery; Peter C. Kronfeld, Chicago, ophthalmology; Gordon K. Moe, Syracuse, physiology and pharmacology; Arthur W. Proetz, St. Louis, otolaryngology; Dickinson W. Richards, Jr., New York, medicine; Robert L. Sanders, Memphis, surgery; Francis E. Senear, Chicago, dermatology; and William A. Sodeman, New Orleans, medicine.

The Society was organized in 1929 with the announced purpose "to make available to the medical profession of the South the postgraduate teaching material of Dallas"; 108 practicing physicians were its charter members. Annual spring conferences have been held since, and from the first registration of 236 physicians, most of whom were Dallas residents, attendance has grown until within the last two years registration has exceeded 1,200 with many states being represented. At present there are 145 active members, 21 fellows, and 50 senior members. Officers are Drs. Edwin L. Rippy, president; G. Raworth Williams, vice-president; Earl L. Loftis, secretary; and Ben F. Harrison, Jr., treasurer. Director of clinics is Dr. Karl B. King, assisted by Dr. Carl O. Patterson.

Interested physicians may register in advance with the society, 433 Medical Arts Building, Dallas 1.

Gynecology Study Announced

Dr. Michael E. DeBakey, professor of surgery and chairman of the department at Baylor University College of Medicine, Houston, will discuss "The Problem of Venous Thrombosis" for the second Group Study in Gynecology to be sponsored by Austin physicians. The address, to be held March 28 at 8 p. m. in the Nurses Auditorium of Seton Hospital, Austin, is open to the medical public.

Medical Board Sets Examination Date

Examinations will be given by the Texas State Board of Medical Examiners on June 14, 15, and 16 in Austin. Physicians interested in qualifying for a license to practice in Texas may obtain additional details from the secretary of the board, Dr. M. H. Crabb, 1714 Medical Arts Building, Fort Worth 2.

TEXAS RADIOLOGICAL SOCIETY

About eighty-five members and guests, eighteen manufacturers' representatives, and thirty-two women attended the meeting of the Texas Radiological Society in Galveston, January 19-20.

Thirteen new members were accepted by the society, which decided to meet next on January 18 and 19, 1952, in Houston. Officers elected include Drs. Curtis H. Burge, Houston, president; Robert E. Moreton, Fort Worth, president-elect; J. E. Miller, Dallas, first vice-president; E. F. Lyon, San Antonio, second vice-president; R. P. O'Bannon, Fort Worth, secretary-treasurer; and R. T. Wilson, Austin, historian.

The following scientific program was presented:

JANUARY 19

Dr. Jesse B. Johnson, Galveston, Presiding

Necessity of Further Advances in Roentgen Diagnosis of Pulmonary Lesions—Dr. Lawrence L. Robbins, Massachusetts General Hospital, Boston.
Degenerative Joint Diseases and Related Conditions—Dr. Lester W. Paul, University of Wisconsin, Madison.
Place of Irradiation in Treatment of Carcinoma of the Breast—Dr. Hugh Hare, Lahey Clinic, Boston.
Primary and Metastatic Bone Neoplasms—Dr. Harry Hauser, City Hospital, Cleveland.
Round-Table Luncheon—Dr. Dean Jones, San Antonio, Presiding.

Dr. Walter Stork, Houston, Presiding

Extramucosal Tumors of Esophagus and Stomach—Dr. Robbins.
Peripheral Carcinoma of the Lung—Dr. Paul.
Carcinoma of the Larynx—Dr. Hare.
Radiation Therapy of Inflammatory Lesions—Dr. Hauser.

JANUARY 20

Dr. Benjamin DuBilier, Austin, Presiding

Cine-Angiocardiography—Dr. Edgar Spackman, Fort Worth
Recognition and Significance of Pulmonary and Mediastinal Lymph Nodes—Dr. Robbins.
Lung Abscess—Dr. David M. Earl, Houston.
Diseases Associated with Generalized Osteosclerosis—Dr. Paul.
Round-Table Luncheon—Dr. David Allen, Wichita Falls, Presiding.

Dr. Herman Sehested, Fort Worth, Presiding

Mucoid Impaction of the Bronchi—Dr. Robert R. Shaw, Dallas.
Treatment of Thyroid Carcinoma—Dr. Hare.
Subarachnoid Hemorrhage—Dr. Albert D'Errico, Dallas.
Tumors and Cysts of the Chest—Dr. Hauser.

Visitors were greeted by the mayor of Galveston, Herbert Cartwright, and the president of the society, Dr. Wayne V. Ramsey, Abilene. There was a friendship hour the evening of January 19, a cocktail party given by x-ray equipment and film dealers the next evening, and the annual banquet following the cocktail party.

Women guests were entertained with a tea January 19 in the home of Mrs. Jesse B. Johnson and a luncheon the next day.

GENERAL PRACTICE PRECEPTORS WANTED

A panel of sixty or more general practitioners willing and qualified to act as preceptors is being formed by the Texas Academy of General Practice at the request of the University of Texas Medical Branch. If present plans are carried out, these physicians will assist in a new program to begin next September. Students at the Medical Branch will have training periods of from two to four weeks each under a preceptor in order to become familiar with the problems of clinical practice.

Any general practitioner interested in participating in the preceptorship program is requested to send his name, the size of his community, the hospital and laboratory facilities available, and a breakdown of the type of his practice to Dr. H. T. Jackson, Medical Arts Building, Fort Worth.

UNIVERSITY OF TEXAS MEDICAL BRANCH

A grant of $16,000 has been received by Morris Pollard, D.V.M., head of the Virus Research Laboratory, from the National Foundation for Infantile Paralysis to continue his poliomyelitis research. An additional grant of $7,500 from the H. H. Weinert Cardiovascular Research Fund has been given Dr. George R. Herrmann, professor of medicine and Director of the Cardiovascular Research Laboratory. Other grants received recently are $4,698 for research to Dr. R. H. Rigdon, professor of pathology, and $5,400 to C. M. Pomerat, Ph. D., Director of the Tissue Culture Laboratory, for study of the effects of cortisone on arthritis.

Several new appointments have been announced at the Medical Branch. From Wayne University College of Medicine, Detroit, M. Mason Guest, Ph. D., has come to accept appointment as professor of physiology. Dr. William A. Cantrell and Dr. Elmer I. Bruce, Jr., will assist Dr. William Shanahan, who is professor of psychiatry and Director of the State Psychiatric Hospital. Both assistants received their residency training in psychiatry at the Medical Branch.

The three major laboratory buildings have been officially named by the Regents of the University of Texas. The oldest, erected in 1890, is designated as the Ashbel Smith Building in honor of Dr. Ashbel Smith, who served as first Surgeon General of the Republic of Texas. The laboratory completed in 1931 has been named in honor of William Keiler, F.R.S.E., the Medical School's first professor in anatomy who also was a former President of the State Medical Association. The Gail Borden Building, which is now being completed, will honor Gail Borden, pioneer Texas scientist and nutritionist.

Several distinguished visitors en route to Mexico City were guests of the Medical School. They included Dr. L. Colbrook, London, who introduced sulfonamide drugs; Mr. A. B. Wallace, F.R.C.S., Edinburgh; Dr. G. Thorsin, Sweden; Mr. Patrick Clarkson, London, chief surgeon of Guy's Hospital; Dr. H. Hihazi, Egypt, professor of surgery, University of Cairo; and Dr. William Boyd, professor of pathology and bacteriology, University of Toronto, Canada. Brig. Gen. O. O. Benson, Jr., School of Aviation Medicine, Randolph Field, also visited the Medical School. C. M. Pomerat, Ph. D., Director of the Tissue Culture Laboratory, was a guest speaker at the International Congress of Plastic Surgery in Mexico City, which the above-named visitors attended, and also at the Cardiology Institute there.

CHRONIC ILLNESS CONFERENCE SET

The first national conference of the recently organized Commission on Chronic Illness will be held in Chicago, March 12-14. The aim will be to determine how the chronic disease problem can be attacked through prevention.

Co-sponsored by the National Health Council and the U. S. Public Health Service, the conference will include five working sections dealing with the evaluation of scientific data, prevention and medical practice, professional information and training, community organization and services, and public information. Representatives of national voluntary and official agencies and professional organizations and individuals working in fields related to the problem of chronic disease will participate.

Veterans Administration Replaces Medical Director

Vice Admiral Joel T. Boone, U. S. Navy Medical Corps, retired, will assume the duties of chief medical director of the Veterans Administration by April 1, Carl R. Gray, Jr., administrator of veterans affairs, has announced. Admiral Boone replaces Dr. Paul B. Magnuson.

PERSONALS

Dr. Curtice Rosser, Dallas, was elected associate editor of the *Southern Medical Journal* at the 1950 meeting of the Southern Medical Association, reports the *Journal.* Dr. Rosser is president of the association.

Dr. C. M. Hendricks, El Paso, president of the American Research and Education Foundation, was honored at a dinner in New York recently as reported in the El Paso *Herald Post.*

Dr. May Owen, Fort Worth, was honored as one of nine outstanding women of Texas at a "Party of the Year" February 9 in Mineral Wells. Vice-President Alben Barkley was the principal speaker at this second annual event sponsored by twenty prominent Texans.

Dr. Felix R. Collard, Jr., will serve as field commissioner for the Northwest Texas Council of Boy Scouts of America, states the Wichita Falls *Daily Times.*

S. Edwards Sulkin, Ph. D., professor of bacteriology and immunology at Southwestern Medical School, Dallas, on December 13 was given the third annual award of the Dallas County Hospital Council for distinguished service, according to *Texas Hospitals.*

The Wichita Falls Junior Chamber of Commerce will be headed by *Dr. E. Aubrey Cox* in 1951, according to the Wichita Falls *Daily Times.*

Dr. B. Ainsworth Kuehne, Austin, and Miss Polly Harvey exchanged nuptial vows during the Christmas holidays in Austin.

Dr. Walter K. Long, Austin, was wed to Miss Alice M. Cromer on November 4, in Washington, D. C. Mrs. Long is a sister of *Dr. Horace E. Cromer, Jr.,* Austin.

The wedding of *Dr. Thomas O. Shindler,* Galveston, to Miss Betty Jean Randal of that city in December is reported by the University of Texas Medical Branch Alumni Association *Bulletin.*

Dr. and Mrs. G. E. Neese, Chillicothe, are the recent parents of a boy, states the Chillicothe *Valley News.*

Girls were born in December to *Dr. and Mrs. G. D. Broyles, Jr.,* Houston, and *Dr. and Mrs. L. H. Green,* Houston, reports the *Bulletin* of the University of Texas Medical Branch Alumni Association.

Parents of new sons are *Dr. and Mrs. J. E. Johnson, Jr.,* Galveston, and *Dr. and Mrs. C. J. Torno,* Pasadena, according to the University of Texas Medical Branch Alumni Association *Bulletin.*

COLLEGE OF PHYSICIANS COURSES

Eight postgraduate courses arranged by the American College of Physicians have been announced for the spring months. Each will last a week and each will cost $30 for college members and $60 for nonmembers with the exception of the course in electrocardiography at Boston, for which fees will be doubled. The courses are as follows:

Physiological Approach to Clinical Problems in Cardiovascular Diseases, February 12-17, Los Angeles.

Recent Progress in Internal Medicine, March 19-23, Portland, Ore.

Clinical Electrocardiography, March 26-31, Detroit.

Diseases Due to Allergic and Immune Mechanisms, April 24-28, Pittsburgh.

Some Recent Developments in Principles and Practice of Modern Internal Medicine, May 7-12, Philadelphia.

Electrocardiography: Basic Principles and Interpretation, May 14-19, Boston.

Dynamic Therapeutics of Chronic Diseases, May 21-25, New York.

Internal Medicine, June 4-8, Boston.

Additional information may be obtained from the executive secretary, Mr. E. R. Loveland, 4200 Pine Street, Philadelphia 4.

Texas Society of Medical Technologists

The Texas Society of Medical Technologists will hold its nineteenth annual convention April 6 and 7 at the Galvez Hotel, Galveston.

LIBRARY SECTION

PACKAGE SERVICE

The package library consists of collections of reprints and other periodical material on various subjects, prepared for lending to members of the Association. Request for packages should be addressed "Library, State Medical Association of Texas, 700 Guadalupe Street, Austin, Texas." Twenty-five cents in stamps should be enclosed with the request to cover postage and part of the expense of collecting the material. Packages are allowed to remain in the hands of the borrower for 14 days.

ACCESSIONS

The following additions were made to the Library during January:

Reprints received, 2,273.

Journals received, 335.

Books received, 12.

Pulmonary Ventilation and Its Physiological Regulation, Gray; *Your Prostate Gland, Letters from a Surgeon to His Father,* Nesbit; *Harvey Lectures, 1948-1949,* Harvey Society of New York; *Use of Pedicles Flaps of Skin in Plastic Surgery of the Head and Neck,* New and Erich, Charles C. Thomas, Publishers, Springfield, Ill.

Health Services and Special Weapons Defense, Federal Civil Defense Administration, United States Government Printing Office, Washington, D. C.

Cost and Financing of Social Security, Meriam & Schlottenbeck, Brookings Institute, Washington, D. C.

The Science of Health, Meredith, The Blakiston Company, Philadelphia and Toronto.

Transactions of the Southern Surgical Association, Burch, editor, J. B. Lippincott Company, Philadelphia, Montreal, and London.

Medical Diseases of the Kidney, McManus, Lea and Febiger, Philadelphia.

Atlas of Histologic Diagnosis in Surgical Pathology, Neuburger, Williams and Wilkins, Baltimore.

Functional Anatomy of the Limbs and Back, Hollingshead; *Physical Diagnosis,* Major, W. B. Saunders Company, Philadelphia and London.

Are Doctors Human, Gordon; *The Promise of Geriatrics,* Desmond, American Medical Association, Chicago, Ill.

Medical Care for Americans, Goldmann and Leavell, editors, American Academy of Political and Social Science, Philadelphia.

SUMMARY OF SERVICE

Local users, 69.	Borrowers by mail, 103.
Local packages, 32.	Packages mailed, 45.
Items borrowed, 215.	Film borrowers, 58.
	Films loaned, 46.

MOTION PICTURE FILM LIBRARY

Motion picture films on medical subjects, 16 mm., both silent and sound, some in color, and suitable for either medical or lay audiences, are available for loan to county medical societies, hospital staffs, or individual physicians, on request. Borrowers will be required to pay only the cost of shipment of the films, by express, with insurance, and for any damage to films in the hands of the borrower.

Request for films should be addressed to "Motion Picture Film Library, State Medical Association of Texas, 700 Guadalupe Street, Austin, Texas." A list of available films, with descriptions, will be furnished on request.

The following films were loaned by the Library during the month of January:

Accident Services (British Information Services)—Southwestern University Pre-Medical Association, Georgetown.

Allergy (Mead Johnson)—Dr. James R. Hyslop, Del Rio.

A.M.A. Newsreel (American Medical Association)—Taylor-Jones Counties Medical Society, Abilene.

Anemia, Erythroblastic (Mead Johnson)—Pathology Department, Baylor University College of Medicine, Houston.

Anesthesia with Vinethene (Merck and Company)—Newton Hospital, Newton, and Baylor University Pre-Medical Club, Waco.

Appendicitis in Childhood (Mead Johnson)—Southwestern University Pre-Medical Association, Georgetown.

As Others See Us (American Hospital Association)—Nightingale Hospital, Del Rio, and Nan Travis Hospital Staff, Jacksonville.

Ascorbic Acid and Scurvy (Mead Johnson)—Newton County Memorial Hospital, Newton.

Behind The Shadows (Texas Tuberculosis Association)—Nightingale Hospital, Del Rio.

Bleeding Tendency, Methods for Determination of (Mead Johnson)—University of Houston College of Nursing, Houston.

Breast Cancer: The Problem of Early Diagnosis (American Cancer Society)—Hill County Medical Society, Hillsboro.

Breast Plastic: One-Stage Operation for Pendulous Breasts (Dr. Philip Thorek)—Newton County Memorial Hospital, Newton, and Dr. W. I. Southerland, Sherman.

Breast Self-Examination for Women (American Cancer Society—Orgain Hospital, Bastrop; San Felipe High School Girls, Del Rio; Women's Benefit Association members, Del Rio.

Cancer: The Problem of Early Diagnosis (American Cancer Society)—St. Vincent's Hospital Staff, Sherman.

Cataract Surgery (Dr. R. K. Daily)—Shannon Hospital School of Nursing, San Angelo.

Cerebral Palsy, Treatment, Training and Education (Dr. Herbert Hipps)—Lillie Jolly School of Nursing, Houston, and Scott and White Memorial Hospitals School of Nursing, Temple.

Cloud in the Sky (Texas Tuberculosis Association)—Gonzales High School, Gonzales.

Doctor Speaks His Mind, The (American Cancer Society)—San Felipe High School girls, Del Rio; Women's Benefit Association members, Del Rio; and Nightingale Hospital, Del Rio.

Dwarfism (Mead Johnson)—Drs. Hyslop and Hyslop, Del Rio.

Folvite in the Treatment of the Anemias (Lederle Laboratories, Inc.)—University of Texas College of Pharmacy, Austin.

From Moo to You (Borden Company)—Gonzales High School, Gonzales.

Goodbye Mr. Germ (Texas Tuberculosis Association)—Gonzales High School, Gonzales.

Human Sterility (Winthrop Chemical Company)—Medical and Surgical Clinic, Laredo.

In Daily Battle (National Foundation for Infantile Paralysis)—Twentieth Century Club, Electra.

Infantile Paralysis, Your Fight Against (National Foundation for Infantile Paralysis)—Twentieth Century Club, Electra.

Injuries, Athletic, Care and Prevention (Becton, Dickinson and Company)—Austin College Athletic Association, Sherman.

Lesions of Vulva, Vagina and Cervix (Dr. Karl Karnaky)—Jones-Watkins Clinic, Wellington.

Normal Delivery (Mead Johnson)—Jones-Watkins Clinic, Wellington.

On Our Own (National Foundation for Infantile Paralysis)—Slaton P.T.A., Slaton; Scott and White Memorial Hospitals School of Nursing, Temple; and Dr. James R. Hyslop, Del Rio.

Plain Facts (American Social Hygiene Association)—Scott and White Memorial Hospitals School of Nursing, Temple.

Proof of the Pudding (Metropolitan Life Insurance Company)—N.H.A. Club, Jacksonville, and Home Economics Class and Instructors, Fred Douglass School, Jacksonville.

Psychiatry in Action (British Information Services)—Alpha Epsilon Delta Pre-Medical Fraternity, The University of Texas, Austin.

A Question in Time (American Cancer Society)—Dr. James R. Hyslop, Del Rio.

Scabies (British Information Services)—Scott and White Memorial Hospitals School of Nursing, Temple.

Strabismus Surgery (Dr. R. K. Daily)—Shannon Hospital School of Nursing, Abilene.

Sutures Since Lister (Johnson and Johnson)—University of Texas College of Pharmacy Students, Austin.

Techniques of Injection (Becton, Dickinson and Company)—Newton County Memorial Hospital, Newton.

They Also Serve (American Medical Association)—Taylor-Jones Counties Medical Society, Abilene.

Time Is Life (American Cancer Society)—Nightingale Hospital, Del Rio.

Trichomonas Vaginalis and Leukorrhea (Dr. Karl Karnaky)—Brayten Pharmaceutical Co., Chattanooga, Tenn., and the Southern Medical Association, St. Louis.

Tuberculosis in Childhood (Mead Johnson)—Drs. Hyslop and Hyslop, Del Rio.

Uterosalpingography (E. Fougera and Company)—Medical and Surgical Clinic, Laredo.

Varicose Veins and Their Complications (Becton, Dickinson and Company)—Alpha Epsilon Delta Pre-Medical Fraternity, The University of Texas, Austin.

Varicose Veins, Treatment of (G. D. Searle and Company)—Taylor-Jones Counties Medical Society, Abilene.

Vitamin A in Human Nutrition (Mead Johnson)—Hill County Medical Society, Hillsboro.

What Is Cancer? (American Cancer Society)—Dr. James R. Hyslop, Del Rio.

BOOK NOTICES

[1]Clinical Nutrition

Edited by Norman Jolliffe, M. D.; F. F. Tisdall, M. D.; and Paul R. Cannon, M. D. Cloth, 925 pages. $12. New York, Paul B. Hoeber, 1950.

This large volume written by thirty-six different contributors attempts to cover the whole field of clinical nutrition. The editors are well known for their experience in nutrition. The royalties from this book were assigned by the editors

[1]*Joe D. Nichols, M. D., Atlanta.*

and authors to the Food and Nutrition Board. The National Vitamin Foundation made a generous financial contribution to cover the cost of the enlarged plates and much of the expense of editing.

Part 1 deals with the diagnosis of nutritional deficiency. The pathogenesis, dietary history, clinical signs, biochemical methods, and radiologic and laboratory aids are fully covered.

Part 2 deals with protein and carbohydrate malnutrition and has separate chapters on each of the known vitamin and mineral deficiencies.

Part 3 discusses therapy and prevention.

This reviewer deplores the fact, that in such a complete work on nutrition as this presumes to be, the newer concepts of total nutrition are hardly mentioned. Natural food grown on fertile soil eaten fresh means good nutrition. Anything less is "fragmentation."

[2]Selected Studies on Arteriosclerosis

Rudolf Altschul, M.U.Dr., Professor of Histology, University of Saskatchewan, Saskatoon, Canada. Cloth, 182 pages. $5.50. Springfield, Ill., Charles C. Thomas, 1950.

This book is a collection of studies, principally by the author, on the various aspects of the experimental approach to arteriosclerosis. The chapters are loosely related and the material is presented with few definite conclusions. This is chiefly a cytologic study in contrast to the many reports in the literature on biochemical concepts.

The experiments, consisting of feeding cholesterol in various forms to rabbits and other rodents, are used to show the similarity of "experimental arteriosclerosis" to human arteriosclerosis. However, the author stresses the fact that "arteriosclerosis" is not a clinical entity and that much more work will have to be done to prove that the vascular pathology produced in animals is analogous to the changes found in human arteriosclerosis.

While the author makes no claims that these studies will be of any assistance to the pathologist, it is definitely of interest to all physicians who are eager to see progress made in solving one of the greatest problems in human disease.

[3]Types of Diabetes Mellitus and Their Treatment

Arthur R. Colwell, M. D., Associate Professor of Medicine and Director of Medical Specialty Training, Northwestern University Medical School; Attending Physician, Evanston Hospital; Consulting Physician, Wesley Memorial Hospital, Municipal Tuberculosis Sanitarium, Chicago. Fabrikoid, 97 pages. $2.25. Springfield, Ill., Charles C. Thomas, 1950.

This little booklet is more or less a pocket-size edition. Its title gives exactly the context of the book. There is no index. What has been referred to as a bibliography might more appropriately be called references.

Dr. Colwell clearly defines the different types of diabetes, this differentiation being made on the severity of the disorder. While there is nothing new in the material presented, it is handled well. The monograph is intended for general practitioners as well as specialists. It serves as a handy reference to the fundamentals of diagnosis, differentiation, and treatment.

Some of the best material in the monograph are those that refer to the computation of diabetic diets. This is clear and easy to understand, and certainly it should be a great help to many doctors. Dr. Colwell's experiences with the various types of insulin, which he has studied extensively, are presented in some detail.

One gets the impression that he is inclined to be a purist in his management of diabetes. His experience with globin insulin seems to be a little more satisfactory than that of other observers.

This book should be on the desk of every doctor. This applies to the internist, surgeon, obstetrician, and every other specialist, and certainly to every general practitioner. It serves as a quick and ready source of orientation about some of the major questions of diabetes and its management. The material is clearly presented and readable.

[4]Pathologic Physiology: Mechanisms of Disease

William A. Sodeman, M. D., F.A.C.P., The William Henderson Professor of the Prevention of Tropical and Semi-Tropical Diseases, Tulane University of Louisiana School of Medicine; Senior Visiting Physician, Charity Hospital of Louisiana; Consultant in Medicine, U. S. Marine Hospital, New Orleans, Editor. Cloth, 808 pages. $11.50. Philadelphia, W. B. Saunders Company, 1950.

This is a collaborative effort by twenty-five authors which approaches problems of disease from the standpoint of disturbed physiology. As the preface states, the volume is not intended to take the place of standard texts on physiology or medicine. The diseases considered are largely those in the field of internal medicine.

In the opinion of the reviewer, the authors have in general succeeded in presenting briefly the important facts related to the various topics. The volume is adequately illustrated and the bibliographies, while not extensive in many chapters, are an adequate guide to further reading.

It is believed the book will be highly useful to medical students, and physicians in the field of internal medicine.

[5]Binocular Vision

Kenneth N. Ogle, Ph. D., Section on Biophysics and Biophysical Research, Research Consultant in the Section on Ophthalmology, Mayo Foundation and Mayo Clinic, Rochester, Minn. Cloth, 345 pages. $10. Philadelphia, W. B. Saunders Company, 1950.

This book accomplishes its purpose well. That purpose is not immediately clinical and hence is of limited interest to the clinical ophthalmologist. Binocular vision is made the subject of basic research and theory, most of which originated in the late Dartmouth Eye Institute at Hanover, N. H.; much of this work, together with the researches of other notable students in this field, is organized into a new and much-needed unification of widely scattered references on this subject.

The problem with which the book is mainly concerned are those of sensory perception, particularly as regards the cooperation of the two retinas and the process of fusion, spatial orientation and stereopsis, and problems concerned with the sizes of retinal images as they affect perception when they are altered experimentally and when they are unequal, as in aniseikonia. Some of the discussions are highly theoretic and teleologic at times, but most of the book is objective in the form of large sets of mensural data, illustrations, and mathematical ratiocination, all of which impress the reader with the high degree of digression pursued by this highly specialized hybrid of ophthalmology and physics.

In spite of the lack of the clinical recipe, which is poetic license for basic research, Dr. Ogle's scientific treatise is a milestone in the evolution of this difficult subject. Like most nonclinical research, it must stand mostly on its simple merit, for the present at least, of seeking the truth, and evaluation in terms of its clinical application must await future developments for which this book will serve as an outstanding and excellent foundation.

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[2]*James M. Lowenstein, M. D., Port Arthur.*
[3]*J. Shirley Sweeney, M. D., Gainesville.*
[4]*C. E. Gordon, M. D., Dallas.*
[5]*Fred M. Wilson, M. D., Austin.*

[6]Treatment in Psychiatry

Oskar Diethelm, M. D., Professor of Psychiatry, Cornell University Medical College; Psychiatrist-in-Chief, New York Hospital. Cloth, 546 pages. $8.50. Springfield, Ill., Charles C. Thomas, 1950.

In his second edition, Dr. Diethelm has made valuable additions to his previous volume, which already contained a great deal of psychiatric material. The overall structure of this volume is effective and the case histories are beautifully described even though the majority seem to be dated much earlier than the present time of study.

In any textbook of treatment of psychiatry the author is taking upon himself a tremendous task in trying to put down in words that occupy only a few hundred pages the many ramifications of therapeutic procedures. Since this book was written primarily for persons concerned with the therapy of personality difficulties, the manner in which the author divides his therapeutic techniques according to symptomatic difficulties and reaction patterns is undoubtedly the best practical approach.

In the chapters on psychotherapeutic procedures and distributive analysis and synthesis the author has attempted to incorporate in a few pages a massive amount of therapeutic technique. Needless to say whole volumes could be written on this same subject without covering the situation completely. To this reviewer there seems to be a great deal of repetition of psychobiologic facts and theories and at times an apparent wandering in generalities to such an extent that the overall value of a particular paragraph is lost.

The author is to be commended highly for his ability to incorporate in one volume the therapeutic plans involved in the entire psychiatric realm. There are few suggestions that could be made for improvement; however, it does seem that a consolidation of the fundamental facts concerning personality, its difficulties, and its therapeutics could be made. Should there be another volume an increased amount of information concerning psychosomatic aspects of medicine could be submitted to assist the general practitioner.

All in all this second volume of "Treatment in Psychiatry" must be considered as an essential document for the libraries of all psychiatrists and should be a fundamental reference text for all general hospitals. The general practitioner can find invaluable information for the immediate care of acute psychiatric problems but might become mired down in an attempt to study the deeper psychobiologic aspects of the personality in detail for therapy. The reviewer recommends this volume highly to students, nurses, psychiatrists, internists, and general practitioners who are truly interested in the total picture of their patients.

[7]Cancer of the Colon and Rectum

Fred W. Rankin, M. D., Sc. D., F.A.C.S., Surgeon, St. Joseph's and Good Samaritan Hospitals, Lexington, Ky., and Clinical Professor of Surgery, University of Louisville, Louisville, Ky.; and A. Stephens Graham, M. D., M. S. (in Surgery), F.A.C.S., Surgeon, Stuart Circle Hospital, Richmond, Va., and Associate Professor of Surgery, Medical College of Virginia. Second edition. Fabrikoid, 427 pages. $7.50. Springfield, Ill., Charles C. Thomas, 1950.

This work is a revision of the first edition published in 1939 and reprinted in 1945. This revision shows changing attitudes toward operability and the operative approach of the authors and other writers, including presentations of 1948.

The book as a whole gives a fairly complete picture of knowledge of malignancy of the lower gastrointestinal tract. Conflicting views are related along with rather dogmatic statements of the authors' opinions.

Complete statistical data and questionnaire analysis, along with many charts showing operative mortality and end results at different institutions, individually but not comparatively, are presented.

Advances in preoperative and postoperative care including the use of sulfonamides and streptomycin are described, but the use of the newer antibiotics such as aureomycin, Chloromycetin, and terramycin are not mentioned. Advancing knowledge of fluid and electrolyte balance is only briefly discussed.

Multiple stage operative procedures discussed in the first edition are replaced in great part by single stage procedures in this latest edition. Each operative procedure by the authors and others designed for cure or palliation in the treatment of rectal and colonic malignancies is given added clarity by the use of many diagrams.

[8]Textbook of Endocrinology

Robert H. Williams, M. D., Executive Officer and Professor of Medicine, University of Washington Medical School, Seattle, Editor. Cloth, 793 pages. $10. Philadelphia, W. B. Saunders Company, 1950.

This book is unquestionably one of the best available today in the field of endocrinology. Throughout the volume the pathologic physiology of the endocrinopathies is stressed. Recognized authorities in the various fields of endocrinology have collaborated to produce a readable, informative monograph. The section on the adrenal gland is especially interesting.

[9]Proctology in General Practice

J. Peerman Nesselrod, M. Sc. (Med.), M. D., F.A.C.S., F.A.P.S., Associate in Surgery, Northwestern University Medical School; Associate Surgeon, Division of Proctology, Evanston Hospital, Evanston, Ill. Cloth, 276 pages. $6. Philadelphia, W. B. Saunders Company, 1950.

The field of proctology has been enriched during the past few years by several new books, the latest by Dr. Nesselrod's "Proctology in General Practice."

The sections dealing with diagnostic principles, anal infection, anorectal malformations, prolapse of the rectum, and clinical proctoscopy are excellent. Throughout the book the reader can recognize the teaching of Dr. L. A. Buie and his associate, Dr. N. D. Smith, of the Mayo Clinic.

The book is well written. The illustrations are excellent. The general practitioner, surgeon, and proctologist will be well repaid by careful reading of this small, concise text.

[10]Infrared Radiation Therapy Sources and Their Analysis with Scanner

Leopold Rovner, Consulting Physicist, Cambridge, Mass. Cloth, 34 pages. $1.50. Springfield, Ill., Charles C. Thomas, 1950.

This booklet is a short explanation of the need for and manner of proper evaluation of sources of infrared generation and measurement of dosage of infrared over the treatment area by the so-called scanner method.

The scanner instrument is a recording infrared intensity meter which makes a linear response record of radiation intensities observed by a sensitive bolometer element of the scanner.

The booklet should be a valuable reference for physicians devoting their work to physical medicine. Physicians in other fields would find it of little interest.

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[6]*Charles H. Brown, M. D., Wichita Falls.*
[7]*E. Aubrey Cox, M. D., Wichita Falls.*
[8]*George Clifford Thorne, M. D., Austin.*
[9]*Hugh Beaton, M. D., F.I.C.S., Fort Worth.*
[10]*C. H. McCuistion, M. D., Austin.*

ORGANIZATION SECTION

AMERICAN MEDICAL ASSOCIATION

Congress on Medical Education and Licensure

The forty-seventh Annual Congress on Medical Education and Licensure was held at the Palmer House, Chicago, on February 11-13. One session was devoted to a discussion of problems relating to the present emergency and mobilization crises as they affect the medical schools and teaching hospitals. Various plans for the training of residents and the utilization of some newer techniques in conducting examinations for licensure were featured in another session.

Representatives of the government services, the medical schools, and civilian medicine participated in the panel discussion which followed papers outlining the present policies of the Selective Service System and the National Security Resources Board. Other papers covered the continuing evolution of the medical curriculum, the survey of medical education, the supply of physicians' services, current campaigns against quackery, and a newly proposed plan for handling internship appointments.

Medical Education Foundation

The American Medical Education Foundation, plans for which were announced at the Cleveland meeting of the American Medical Association, has been set up as a not-for-profit corporation under the laws of Illinois. The foundation will be directed by an eleven-man board chosen from the Board of Trustees of the A.M.A., which appropriated half a million dollars to establish the foundation, and the Council on Medical Education and Hospitals. The directors will arrange for the distribution of funds, which will be allotted to approved medical schools without restriction as to how it shall be used to further the basic training of students.

Each member of the medical profession has been invited to contribute to the foundation, the sum of $100 annually being suggested to assure adequate support. The Commissioner of Internal Revenue has been asked to rule that gifts to the foundation will be deductible in the computation of income taxes. Officials of the foundation report that contributions from individual physicians and interested laymen are already coming in and request that additional gifts be addressed to the American Medical Education Foundation, 535 North Dearborn Street, Chicago 10.

STATE MEDICAL ASSOCIATION

EXECUTIVE COUNCIL MEETS

All but five members of the Executive Council of the State Medical Association were present for a regular meeting in Austin, February 4. Preceded by a dinner February 3 for presidents and secretaries of county medical societies, the meeting brought before officers and chairmen of councils and committees a number of problems which confront the medical profession:

The doctor draft. A report from the State Advisory Committee to the National Advisory Committee to the Selective Service System emphasized the gravity of the military situation and the rapidity with which doctors in Priorities 1 and 2 may expect to be called to service.*

Civil defense. The necessity for all physicians to become familiar with methods for treating atomic, biologic, and chemical injuries, and to cooperate in community defense planning was stressed.*

Tennessee Plan for surgical insurance. The Council on Medical Economics introduced a proposal for study of an agreement between the State Medical Association and certain insurance companies providing that the fee for surgical procedures on patients with low incomes would be agreed upon jointly and paid in full by the companies for such patients carrying insurance policies. The council was requested to continue its study, make available to the membership of the Association additional details of the plan, and present the matter again when the House of Delegates meets in May.

American Medical Association dues. A lengthy discussion of the stand taken by the American Medical Association in insisting that 1950 dues be paid before 1951 dues are accepted resulted in no definite conclusion. It was suggested that education as to the benefits received from A.M.A. membership is the best solution.

Federal participation in postgraduate medical education. The Council on Medical Education and Hospitals was directed to confer with medical school officials and the State Health Officer with respect to postgraduate medical education in Texas and the relationship of federal funds thereto. It was pointed out that the Association wishes to cooperate in developing outstanding postgraduate programs but that there is danger in federal subsidy of such programs.

Negro membership in the Association. An amendment to the Constitution of the Association providing for elimination of the word "white" as a prerequisite for membership will be before the House of Delegates for final action in May. Dr. William M. Gambrell, Austin, President, urged that members of the Association study the problem and be ready either to vote for the amendment or to offer a substitute plan to assure Negro physicians the opportunity of securing the educational advantages which the organization offers.

Progress reports from most of the councils and committees were made, and Mrs. William M. Gambrell, Austin, President of the Woman's Auxiliary, and several other members of the Auxiliary pledged their support to the Association's program.

Highlight of the banquet the evening before the Executive Council meeting was an address by Mr. John Ben Shepperd, Secretary of State for Texas, who urged physicians to be good citizens and participate in the affairs of their community, state, and nation. Dr. F. J. L. Blasingame, Wharton, member of the Boards of Trustees of the State and American Medical Associations, and Dr. Gambrell spoke in the same vein.

Annual Session Guests Announced

Dr. George G. Finney, Baltimore surgeon; Senator George Smathers, junior United States senator from Florida; and the Honorable Martin Dies, Lufkin, former member of the United States House of Representatives, will speak at general meetings of the 1951 annual session of the State Medical Association in Galveston. Dr. Finney and Senator Smathers will be presented Tuesday morning, May 1, and Mr. Dies, Wednesday noon, May 2. Dr. Finney also will give a paper for the Section on General Practice.

The scientific program this year will feature Texas physicians chosen by their associates as outstanding in their

*Additional information on these subjects appears elsewhere in this JOURNAL.

specialty fields. These ten doctors will participate in the question and answer periods at the three clinical luncheons Tuesday, May 1. They are Drs. Charles T. Ashworth, Fort Worth, clinical pathology; Willard R. Cooke, Galveston, obstetrics and gynecology; Michael E. De Bakey, Houston, surgery; Arild E. Hansen, Galveston, pediatrics; Hardy A. Kemp, Houston, public health; Charles L. Martin, radiology; Tate Miller, general practice; J. M. Robison, Houston, ear, nose, and throat; C. S. Sykes, Galveston, eye; and Henry M. Winans, Dallas, internal medicine.

The complete program will appear in the March issue of the JOURNAL.

COUNTY SOCIETIES

Anderson-Houston-Leon Counties Society

R. H. Kay, Palestine, was elected president of the Anderson-Houston-Leon Counties Medical Society for 1951. Other officers chosen were Joseph G. Murphy, Palestine, vice-president; Carl O. Murray, Jr., Crockett, secretary-treasurer; R. H. Bell, Palestine, delegate; John L. Dean, Jr., Crockett, alternate; and John T. Humphries, Palestine, Carl B. Goolsby, Crockett, and E. P. Powell, Centerville, censors.

Austin-Waller Counties Society

December 12, 1950

Twenty-five guests enjoyed a turkey dinner-meeting of the Austin-Waller Counties Medical Society on December 12 at the home of Dr. and Mrs. H. E. Roensch, Bellville.

Dr. J. J. Hopkins, Brookshire, was reelected president for the year 1951 and Robert A. Neely, Bellville, was chosen as secretary-treasurer.

Bell County Society

October 4, 1950

(Reported by E. O. Bradfield, Secretary)

Practical Consideration of Peripheral Vascular Disease—Michael E. DeBakey, Houston.

The Bell County Medical Society met in regular session October 4 in Temple with ninety-six members and guests present. The above scientific program was given.

Transfer of the membership of Harry Frey, Belton, from Williamson County Society and application for membership of William A. Goodrich, Jr., Temple, were approved. A motion by E. D. McKay, chairman of the public relations committee, that a military affairs committee of six members (three senior members and three veterans of World War II) be appointed by the executive committee was seconded and passed.

Other motions passed were that the society expend such funds as approved by the executive committee for radio and newspaper advertising against socialized medicine; that approval be given to allow individuals to so advertise; and that the offer by Harry Frey, county health officer, of the mobile x-ray unit for yearly tuberculosis checks among food handlers be accepted.

December 6, 1950

(Reported by E. O. Bradfield, Secretary)

Responsibilities of General Practitioner for Care of Psychiatric Patients and Plans for State-wide Division of University of Texas Postgraduate School of Medicine—Jack R. Ewalt, Houston.

The above scientific program was presented at the December 6 meeting in Temple of the Bell County Society. Sixty-five members and guests attended.

P. M. Ramey read a request from the District Nurses' Society that the Medical Society appoint a committee to aid in making plans for better medical care for the Negroes of the community. After comments on the existing situation, a motion was made, seconded, and passed that the committee be so appointed.

With two amendments the motion by which the military affairs committee became a procurement and assignment committee carried.

The following officers were elected for 1951: E. O. Bradfield, president; A. R. Kirkley, vice-president; E. R. Veirs, secretary-treasurer; A. C. Scott, Jr., and Joe A. Fowler, delegates; and J. W. Pittman, V. M. Longmire, and F. W. Howell, censors. Drs. Kirkley and Pittman are of Belton; Dr. Fowler of Killeen; and other officers of Temple.

Bexar County Society

November 16, 1950

(Reported by J. J. Hinchey, Secretary)

Impacting and Coapting Bone Plate to Obtain Uniform Healing of Fractures—C. S. Venable, San Antonio.

Production of Radioisotopes for Medical Purposes at the Oak Ridge Plant—Capt. Irving W. Cavedo, Medical Corps, Brooke Army Medical Center.

The regular meeting of the Bexar County Medical Society and executive board was held November 16 in San Antonio.

Paul Gorsuch was granted leave of absence for postgraduate study, and William W. Sawtelle was granted military leave of absence.

The executive board studied the recommendations in several matters of the membership committee. Jack Partain reported on civil defense council proceedings and requested that the society determine which members have had training or experience in atomic or other disaster medical work. Herman S. Wigodsky was appointed atomic coordinator.

The amendments to the constitution and by-laws proposed at the previous meeting were adopted. W. S. Luedemann proposed an amendment modifying the duties of the treasurer.

Officers for the Bexar County Medical Society have been elected as follows: J. Lewis Pipkin, president; J. Manning Venable, president-elect; Cole C. Kelley, vice-president; S. Perry Post, secretary; and C. L. McGehee, treasurer. All officers are of San Antonio.

Brown-Comanche-Mills-San Saba Counties Society

December 12, 1951

O. N. Mayo, Brownwood, was elected president of the Brown-Comanche-Mills-San Saba Counties Medical Society at the December 12 meeting in Brownwood.

Other officers elected to serve in 1951 are Joe R. McFarlane, Brownwood, vice-president; M. A. Childress, Goldthwaite, secretary-treasurer; H. L. Locker, Brownwood, delegate; and J. B. Stephens, Bangs, alternate. Cancer and tuberculosis committees also were appointed.

Cameron-Willacy Counties Society

December 18, 1950

At its December 18 meeting in Harlingen the Cameron-Willacy Counties Medical Society elected officers for 1951 as follows: Thurmond A. Kinder, Jr., Brownsville, president; John P. Packard, Harlingen, vice-president; J. C. George, II, Brownsville, secretary-treasurer; Geo. E. Bennack, Raymondville, alternate; and E. E. Baden, Raymondville, censor.

Cass-Marion Counties Society

January 10, 1951

(Reported by T. M. Steed, Jr., Secretary)

The Cass-Marion Counties Medical Society has announced its 1951 slate of officers elected at its regular meeting January 10 as follows: H. L. D. Jenkins, Hughes Springs, president; J. I. Allen, Bloomburg, vice-president; T. M. Steed, Jr., Hughes Springs, secretary-treasurer; E. W. Grumbles, Atlanta, delegate; and O. R. Taylor, Linden, alternate.

Colorado-Fayette Counties Society

December 20, 1950

An election of officers was held December 20 by the Colorado-Fayette Counties Medical Society. The following physicians were elected for 1951: John C. Guenther, La Grange, president; John R. Laughlin, Eagle Lake, vice-president; and Edward T. Williams, La Grange, secretary-treasurer.

Cooke County Society

December 16, 1950

Burgess Sealy, Fort Worth, addressed the Cooke County Medical Society at its Christmas meeting December 16. The dinner-meeting was held in the home of Dr. and Mrs. C. K. Mills, Gainesville, and wives of members were guests. Approximately 35 guests and members attended.

Dallam-Hartley-Sherman-Moore Counties Society

December 7, 1950

Heart Disease in Connection with Pregnancy—E. B. Lokey, Amarillo.

Officers for the coming year were elected at the December 7 meeting in Dalhart of the Dallam-Hartley-Sherman-Moore Counties Medical Society. R. C. West, Dumas, was chosen president, and W. J. Mencarow, Dalhart, was named vice-president.

The scientific program was presented as given above.

Dallas County Society

December 12, 1950

At its annual meeting in Dallas December 12, the Dallas County Medical Society elected the following officers for 1951: Charles L. Martin, president; Barton E. Park, president-elect; Martin S. Buehler, vice-president; W. W. Fowler, secretary-treasurer; and Mr. Millard J. Heath, executive secretary. Ridings E. Lee, John L. Goforth, and Alvin Baldwin were chosen as censors, and delegates were named as follows: C. C. Nash, George A. Schenewerk, R. A. Trumbull, M. O. Rouse, Guy T. Denton, Jr., Ridings E. Lee, David W. Carter, Jr., and Jack G. Kerr. Their alternates are Barton E. Park, Wallace B. Wilkinson, Frank H. Kidd, Jr., Edwin L. Rippy, Felix L. Butte, Glenn D. Carlson, Murphy Bounds, and George M. Jones, Jr.

The society recommended that fluorine be added to the municipal water supply to improve dental conditions in Dallas; the recommendation received the tentative approval of Mr. Karl Hoefle, superintendent of the city water department.

Dawson-Lynn-Terry-Gaines-Yoakum Counties Society

December 13, 1950

(Reported by Douglas B. Black, Secretary)

The three new top officers of the Dawson-Lynn-Terry-Gaines-Yoakum Counties Medical Society who were elected at the December 13 meeting are F. E. Seale, Tahoka, president; Douglas B. Black, Lamesa, president-elect; and Thomas M. Prideaux, Lamesa, secretary. A. H. Daniell, Brownfield, was chosen delegate and Douglas B. Black, alternate.

Delta County Society

December 14, 1950

A charter has been issued by the secretary of state for the Delta County Medical Society. Named in the charter were the following physicians: S. F. Blair, Olen G. Janes, Olen Y. Janes, Osler Y. Janes, and Oscar G. Janes, all of Cooper.

El Paso County Society

The El Paso County Medical Society has elected the following officers for 1951: Frank P. Schuster, president; Leigh E. Wilcox, president-elect; Branch Craige, vice-president; Howard J. H. Marshall, secretary-treasurer; R. B. Homan, Jr., F. O. Barrett, and J. Leighton Green, delegates; Russell Holt and Gerald H. Jordan, alternates; Russell Holt (chairman), C. E. Webb, and M. S. Hart, censors.

Galveston County Society

December 12, 1950

Hamilton F. Ford succeeded Herman Weinert, Jr., as president of the Galveston County Medical Society at the official election at the December 12 meeting in Galveston. Other officers were designated as follows: John J. Delany, president-elect; Andrew J. Magliolo, Dickinson, vice-president; Edward J. Lefeber, secretary (reelected); Truman G. Blocker, Jr., delegate; and Marcus Lamar Ross, censor.

Gray-Wheeler-Hansford-Hemphill-Lipscomb-Roberts-Ochiltree-Hutchinson-Carson Counties Society

December 19, 1950

(Reported by Raymond W. Laycock, Secretary)

Early Diagnosis of Cancer of the Breast (motion picture).

Members of the Gray-Wheeler-Hansford-Hemphill-Lipscomb-Roberts-Ochiltree-Hutchinson-Carson Counties Medical Society met in regular session for the above scientific program, the election of officers, and a Christmas dinner December 19 in Borger at which members of the auxiliary were guests.

Oscar Huff, Pampa, was nominated for honorary membership of the society, and the transfer of membership of Henrietta H. Voety, Nassau County, N. Y., was approved.

The following officers were selected for 1951: H. M. Hamra, Borger, president; J. R. Donaldson, Pampa, first vice-president; W. H. Smith, Borger, second vice-president; Harold E. Nicholson, Wheeler, third vice-president; and M. M. Stephens, Borger, fourth vice-president; Raymond W. Laycock, Pampa, secretary-treasurer (reelected); and Malcolm Brown, Pampa, delegate.

Hidalgo-Starr Counties Society

December 14, 1950

(Reported by McKee Caton, Secretary)

The Hidalgo-Starr Counties Medical Society accepted transfers of Richard G. Clark, St. Louis, and Berton Frink, Harris County, at the December 14 meeting. The president, J. F. Lubben, Jr., McAllen, and Secretary McKee Caton, McAllen, read annual reports which were approved. Of the eighty-four members on the society's roll, only six members have not paid American Medical Association dues. Jack R. Ellis, Weslaco, is secretary-treasurer for 1951.

Hill County Society

December 9, 1950

(Reported by Charles A. Garrett, Secretary)

Amputation Prosthesis (motion picture).

Dick K. Cason was elected president of the Hill County Medical Society at its December 9 meeting in Hillsboro. Other officers were selected as follows: Robert W. Shirey, vice-president; Charles A. Garrett, secretary-treasurer; Robert W. Shirey, delegate; T. R. Barnett, alternate; and James M. Buie, C. C. Campbell, and Nellins C. Smith, censors. Dr. Buie is of Whitney, Dr. Campbell of Itasca, and all other officers of Hillsboro.

The scientific program designated above was given.

Jasper-Newton Counties Society

December 14, 1950

Physicians and surgeons of Beaumont and the surrounding area were guests of the Jasper-Newton Counties Medical Society at a dinner party December 14 in Jasper. J. J. McGrath, Jasper, president, presided.

Kerr-Kendall-Gillespie-Bandera Counties Society

January 8, 1951

(Reported by Dor W. Brown, Jr., Secretary)

Physiology of the Adrenal Gland, ACTH and Cortisone—Frederick Steinberg, San Antonio.

Sixteen members attended the regular monthly meeting of the Kerr-Kendall-Gillespie-Bandera Counties Medical Society in Kerrville, January 8. The above talk was given, and details of the January 15 registration of physicians were discussed.

Lamar County Society

December 7, 1950

O. W. Robinson, Paris, was elected president of the Lamar County Medical Society at a dinner-meeting December 7 in Paris honoring wives of members. Stephen H. Grant, Deport, was chosen vice-president and Thomas E. Hunt, Jr., Paris, was reelected secretary-treasurer. Thirty-two members and guests were present.

LaSalle-Frio-Dimmitt Counties Society

December 28, 1950

(Reported by Marion P. Primomo, Secretary)

At its quarterly meeting in Dilley on December 28 the LaSalle-Frio-Dimmitt Counties Medical Society elected the following officers for 1951: John M. Crawford, Carrizo Springs, president; Glenn T. Howard, Pearsall, vice-president; and Marion P. Primomo, Dilley, secretary-treasurer. Dr. O. R. Hollan, San Antonio, spoke on various aspects of gastroenterology.

Lubbock-Crosby Counties Society

January 2, 1951

(Reported by John B. Rountree, Jr., Secretary)

Congenital Anomalies in Genitourinary Tract—A. Lee Hewitt.

The Lubbock-Crosby Counties Medical Society met in regular session January 2 in Lubbock with about thirty members present. The above scientific program was given.

Motions to combine the offices of vice-president and treasurer and to leave the office of secretary separate from treasurer were passed by unanimous vote. A committee to investigate the cost and availability of an executive secretary for the society was appointed.

Medina-Uvalde-Maverick-Val Verde-Edwards-Real-Kinney-Terrell-Zavala Counties Society

December 8, 1950

The Medina-Uvalde-Maverick-Val Verde-Edwards-Real-Kinney-Terrell-Zavala Counties Medical Society held its fourth quarterly meeting in Crystal City on December 8. Drs. Joe W. Kopecky and John J. Hinchey, San Antonio, and Dr. Ernest G. Guy, Baltimore, were guest speakers. At dinner the auxiliary joined the society as guests and Mrs. William M. Gambrell, Austin, President of the Woman's Auxiliary to the State Medical Association, spoke.

The following officers were selected to serve in 1951: L. M. Cartall, Del Rio, president; Dean P. Dimmitt, Uvalde, vice-president; C. R. Sutton, Jr., Uvalde, secretary; Ray Eads, Uvalde, delegate; and Cary A. Poindexter, Crystal City, censor.

Montgomery County Society

The new secretary of the Montgomery County Medical Society is Henry G. Bell, Jr., Conroe. He succeeds William O. Bellnoski, Jr., who has been called to active military duty.

Navarro County Society

December 5, 1950

The Navarro County Medical Society elected the following members to serve as 1951 officials at the December 5 meeting in Corsicana: A. L. Grizzaffi, Frost, president; Dan B. Hamill, Corsicana, vice-president; and C. L. Gary, Jr., Corsicana, secretary-treasurer (reelected).

Orange County Society

January 16, 1951

(Reported by R. F. Minkus, Secretary)

The Orange County Medical Society met January 16 in Orange with twelve members present. The slate of officers elected for 1951 is C. M. Covington, president; T. O. Woolley, vice-president; R. F. Minkus, secretary-treasurer; and H. H. Key, chairman of the board of censors.

County Judge Charlie G. Grooms discussed the progress which has been made on the proposed new $2,000,000 hospital being sponsored by the Commissioner's Court. The society pledged full cooperation.

Panola County Society

(Reported by H. D. Kuykendall, Secretary)

The Panola County Medical Society has announced its officers for 1951. They are C. D. Baker, president; D. B. Daniel, vice-president; Samuel Perlman, secretary-treasurer; H. D. Kuykendall, delegate; and W. C. Smith, alternate delegate. The board of censors consists of C. D. Baker, K. C. Prince, and Glen Johnson. All officers are from Carthage.

Potter County Society

January 8, 1951

(Reported by Mrs. Cassie Atherton, Executive Secretary)

Recent Advances in Prosthesis—Mr. B. M. Goff, Amarillo.
Discussion—Edward F. Thomas, Amarillo.

In the absence of the president Howard E. Puckett, Woolworth Russell presided at the regular session of the Potter County Medical Society January 8 in Amarillo. Two new members were accepted: Dr. Robert Hyde by transfer from the Harris County Medical Society and Dr. Margaret M. Davis by application. Topics discussed were cooperation with the Red Cross in maternity cases of servicemen's wives, the civil defense program, and recent regulations concerning the drafting of doctors.

The above scientific program, presented by Mr. Goff, was supplemented by the demonstration of the suction socket by a patient with a double amputation.

Taylor-Jones Counties Society

December 13, 1950

The Taylor-Jones Counties Medical Society installed Guy L. Patillo as president for 1951 at its annual ladies' night meeting December 13 in Abilene. Other new officers who were installed are J. C. Duff, vice-president; Milton C. Bessire, secretary; R. W. Varner (reelected), delegate; and Floyd D. Taylor, new member of the board of censors. Holdover members of the board are J. N. Burditt and Guy L. Patillo. Outgoing president L. J. Webster was chosen as alternate. Dr. Duff is from Anson; all other officers from Abilene.

Tom Green-Eight County Society

December 11, 1950

(Reported by Gordon F. Madding, Secretary)

The Tom Green-Eight County Medical Society held a called meeting December 11 in San Angelo which was attended by fifty-nine members. The society voted unanimous-

ly to request the dean of the Postgraduate School of Medicine of the University of Texas to consider San Angelo as a future site for participation in the teaching program of the school.

January 2, 1951

(Reported by Gordon F. Madding, Secretary)

Use of Intramedullary Nailing in Treatment of Fractures of Femur (slides)—John J. Hinchey, San Antonio.

The regular monthly meeting of the Tom Green-Eight County Medical Society was held January 2 in San Angelo with twenty-seven members present. H. B. Hightower, D.D.S., spoke on the addition of fluorine to the water for prevention of dental caries; after slight discussion the society unanimously voted approval of the plan.

The above scientific program was presented.

Travis County Society

December 19, 1950

The 1951 officers of the Travis County Medical Society, who will take office in May, were elected in Austin on December 11. They are M. F. Kreisle, president; Joe W. Bailey, vice-president; John F. Thomas, secretary (reelected); Scott T. McGuire, delegate; and J. T. Robison, alternate; all of Austin.

January 16, 1951

A demonstration of the work of the Texas Department of Public Safety was presented at the January 16 meeting of Travis County Medical Society. Members of the society went to the Department of Public Safety building in Austin, where they first saw a colored motion picture taken in Texas City during the explosion and fire in 1947. The film showed the destruction of property, police methods for controlling the area, and problems in identification of the dead. Mr. Glen H. McLaughlin, chief of the Bureau of Identification and Records, then invited society members to make an informal tour of the fingerprint, latent fingerprint, questioned documents, photography, firearms, chemical, and polygraph divisions.

Sam N. Key, Austin, president of the society, presided and introduced M. F. Kreisle as representative of the medical society on the civil defense planning commission for Austin.

Victoria-Calhoun-Goliad Counties Society

December 7, 1950

Chronic Cor Pulmonale—W. W. Bondurant, Jr., San Antonio.
Psychiatry in General Practice—Melbourne J. Cooper, San Antonio.

Dr. George E. Glover, Jr., Victoria, was elected president of the Victoria-Calhoun-Goliad Counties Medical Society at its meeting December 7 in Port Lavaca. Other officers are J. V. Hopkins, Victoria, vice-president; and A. S. Tomb, Victoria, secretary-treasurer and delegate. George H. Kinser, Victoria, was elected censor to serve with Allan C. Shields and Heaton Smith, hold-over members of the board.

Twenty-five members and guests attended the meeting at which the scientific program outlined above was given. Dr. Cooper also showed a motion picture on shock treatment.

Wichita County Society

December 12, 1950

At a meeting December 12 in Wichita Falls the Wichita County Medical Society elected J. A. Little to serve as its 1951 president. Others chosen to serve in official capacities for 1951 are A. W. Pierce, vice-president; M. Z. Smith, secretary; and Bailey R. Collins and R. L. Daily, delegates.

Principal speakers at the meeting were Mr. Frank Ikard, Thirtieth District judge, and Mr. Sam Hill of the Texas Employers' Insurance Association.

DISTRICT SOCIETIES

Seventh District Society

February 21, 1951

(Reported by George W. Tipton, Secretary)

Hiatus Hernia and Associated Lower Esophageal Lesions—A. W. Harrison.
Diseases of the Thyroid Gland—R. L. Gregory.
Present Trends in Colon Surgery—R. M. Moore.
Present Status of Antibiotics in Treatment of Dermatologic Diseases—C. S. Livingood.

Four members of the University of Texas Medical Branch staff will present the scientific program for the Seventh District Medical Society meeting in Austin the afternoon and evening of February 21. In the late afternoon a cocktail party will be held with J. M. Coleman, Ralph Hanna, and W. W. Kelton, Jr., as hosts in their new clinic. The evening program will include a buffet supper and a special performance of the Austin Civic Theater's melodrama "Dirty Work at the Crossroads."

Tenth District Society

March 3, 1951

(Reported by L. C. Heare, Secretary)

Outline and Introduction—T. G. Blocker, Jr.
Organization for the Care of Victims of a Disaster and Atomic Warfare—Chauncey D. Leake, Ph. D.
Pathology of Victims of an Atomic Blast—R. H. Rigdon.
Medical Aspects of Irradiation—George R. Herrmann.
Extremity Injuries and Their Care—W. H. Ainsworth.
Luncheon:
- Address—William M. Gambrell, Austin, President, State Medical Association.
- Problems of the Profession with Regard to Medical Preparedness—Allen T. Stewart, Lubbock, President Elect, State Medical Association.
- Health and Emergency Medical Services—George W. Cox, Austin, State Health Officer.

Treatment of Burns—T. G. Blocker, Jr.
Care of Neurosurgical Injuries—S. R. Snodgrass.
Abdominal Injuries—A. O. Singleton, Jr.
Care of Thoracic Injuries—A. W. Harrison.
Panel Discussion.

A program on medical preparedness for atomic warfare has been arranged for the meeting of the Tenth District Medical Society to be held in Port Arthur on March 5. After the meeting is called to order at 9 a. m. by the president, A. J. Richardson, Sr., of Jasper, members of the staff of the University of Texas Medical Branch, Galveston, will lead the discussions outlined above. The luncheon addresses by the President and President-Elect of the State Medical Association and by the State Health Officer will be related to the scientific papers.

Inquiries about the day-long program may be addressed to L. C. Heare, secretary of the district society, P. O. Box 312, Port Arthur.

Twelfth District Society

January 9, 1951

(Reported by Nellins C. Smith, Secretary)

Recent Advances in Anesthesia—Charles H. Gillespie, Temple.
Treatment of the Menopause—James E. Robertson, Dallas.
The Decompensating Gastrointestinal Tract—Milford O. Rouse, Dallas.
Post-total Gastrectomy Dietary Problems with Suggested Solutions—P. S. Kline, Veterans Administration Hospital, Temple.

The scientific program outlined above was presented at the January 9 meeting of the Twelfth District Medical Society in Temple. The Bell County Medical Society was host to the members of the district society and auxiliary at a luncheon; Mr. Irvin Clary, Temple, addressed the assemblage.

AUXILIARY SECTION

AUXILIARY NEWS

Angelina County Auxiliary

The Woman's Auxiliary to the Angelina County Medical Society held its Yuletide meeting December 15 in the home of Mrs. T. A. Taylor, Lufkin. Mrs. Robert Taylor was co-hostess. Members brought gifts of fruit, toys, and clothing for needy families and Mrs. T. A. Taylor entertained with a Christmas reading. Eleven members and five guests were present.

At the January 10 luncheon meeting in Lufkin of the Auxiliary, Mrs. William M. Gambrell, President of the Woman's Auxiliary to the State Medical Association, was guest speaker. Hostesses were Mrs. Felix Peebles, Jr., and Mrs. J. H. Alexander, Zavalla. Short talks were made by Mrs. R. T. Travis, Jacksonville, and Mrs. C. M. Covington, Orange. Ten members and eight guests attended.—Mrs. W. D. Thames, Jr., Secretary.

Bexar County Auxiliary

The Bexar County Auxiliary entertained Bexar County physicians with a Christmas dinner-dance in San Antonio on December 9. Mrs. Charles L. McGehee, president, and Mrs. John C. Parsons, vice-president, greeted the 200 guests with the assistance of Mesdames J. J. De Leon and Robert F. Gossett, cochairmen.

The auxiliary met January 12 in San Antonio to elect a nominating committee. Mrs. Frank Haggard, honorary life president of the Woman's Auxiliary to both the State and American Medical Association, gave an address on "The Credo of a Doctor's Wife."

Mrs. Jack M. Partain was chairman of the luncheon which followed the meeting and Mesdames Brad Oxford and James Carter, Jr., assisted as hostesses. Mrs. John Smith, Jr., presided at the coffee service.

Mrs. John C. Parsons, social chairman, will be in charge of arrangements for the dinner to be held at the Menger Hotel on January 23 for the wives of the visiting physicians attending the International Postgraduate Medical Assembly. —Mrs. Brad Oxford, Publicity Secretary.

Brazoria County Auxiliary

At a meeting of the Brazoria County Auxiliary in Freeport on December 7, Mrs. B. H. Carlton, Jr., Freeport, outlined the regulations governing the essay contest being sponsored by the Association of American Physicians and Surgeons, with awards up to $1,000 for national winners. The county medical society is offering $25, $15, and $10 for winners in the county. Nineteen members were present.

Cherokee County Auxiliary

Members of the Woman's Auxiliary to the Cherokee County Medical Society were complimented December 12 with a Christmas party at the home of Mrs. Collier Rucker, Jacksonville, whose co-hostess was Mrs. Robert Duff. Mrs. L. L. Travis, president, presided at the silver service. Fifteen members and guests attended.

Galveston County Auxiliary

The annual Christmas party of the Woman's Auxiliary to the Galveston County Medical Society was held December 9 in the home of Dr. and Mrs. Raymond L. Gregory, Galveston. Members and their husbands attended the cocktail party.

Harris County Auxiliary

Members of the East Harris County Chapter of the Woman's Auxiliary to the Harris County Medical Society held a brief business meeting and Yuletide party December 12 in the home of Mrs. George D. Bruce on Crystal Bay. Mrs. H. O. Sappington, Baytown, reported on the legislative meetings being sponsored by the Harris County Auxiliary. The chapter endorsed women candidates nominated for state board positions by the Baytown chapter of the American Association of University Women.

Harrison County Auxiliary

The Harrison County Auxiliary met for a luncheon-business meeting December 5 in Marshall. Mrs. John Hill, president, presided during the business session. Mrs. James Harris, chairman of the public relations committee, reported on its work and Mrs. Frank Littlejohn gave a report on the Southern Medical Association meeting in St. Louis last November. Reports on the District Medical Auxiliary meeting held recently in Texarkana were given by Mrs. L. M. Redding, Mrs. Hill, and Mrs. Littlejohn.

On January 9 the auxiliary sponsored a seated tea in Marshall at which Mrs. Arthur A. Herold, Shreveport, President of the Woman's Auxiliary to the American Medical Association, and Mrs. William M. Gambrell, Austin, President of the Woman's Auxiliary to the State Medical Association, were guest speakers; their talks were broadcast over KMHT. Mrs. O. W. Robinson, Paris, President-Elect of the state auxiliary, was also a guest.

County Auxiliary Officers Mrs. John Hill, president; Mrs. Thomas W. Kempner, vice-president; Mrs. James E. Ball, Mount Pleasant, Council Woman for District 15; Mrs. Malcolm McNatt, secretary; Mrs. S. W. Tenney, treasurer; Mrs. James Harris, member of the state nominating committee, and the out-of-town guests named previously composed the receiving line. Approximately forty members and guests were present.

Hunt-Rockwall-Raines Counties Auxiliary

At their annual Christmas banquet in Greenville on December 12, the Woman's Auxiliary to the Hunt-Rockwall-Rains Counties Medical Society entertained their husbands and guest speakers, Mrs. William M. Gambrell, President of the state auxiliary, and Dr. William M. Gambrell, President of the State Medical Association, Austin. Mrs. Joe Becton, president of the county auxiliary, presided and introduced Dr. C. B. Weis, newly-elected president of the Hunt-Rockwall-Rains Counties Medical Society. A motion

Officers of the Woman's Auxiliary to the State Medical Association of Texas: President, Mrs. William M. Gambrell, Austin; President-Elect, Mrs. O. W. Robinson, Paris; First Vice-President (Organization), Mrs. J. H. McCracken, Dallas; Second Vice-President (Physical Examinations), Mrs. Allen T. Stewart, Lubbock; Third Vice-President (Today's Health), Mrs. Joe T. Nichols, Atlanta; Fourth Vice-President (Program), Mrs. Carlos Hamilton, Houston; Recording Secretary, Mrs. E. W. Coyle, San Antonio; Treasurer, Mrs. John D. Gleckler, Denison; Corresponding Secretary, Mrs. William P. Morgan, Austin; Publicity Secretary, Mrs. R. T. Wilson, Austin; Parliamentarian, Mrs. Robert F. Thompson, El Paso.

picture "Effects of the Atomic Bomb" was shown. More than fifty persons attended.

Nueces County Auxiliary

The Nueces County Auxiliary entertained with a Christmas season open house for members and their husbands December 10 at the home of Dr. and Mrs. Otis E. Marler, Corpus Christi. The Yuletide theme was carried out in the decorations. Organ music by Mr. James H. Garrigan and gift exchanges were part of the entertainment. Hostesses were Mesdames Marler, F. F. Rogers, Charles A. Miller, Martin Biery, Paul B. Guttman, W. R. Hubler, Harold Griffin, and Foy Moody.

Tarrant County Auxiliary

At its December meeting in Fort Worth the Tarrant County Auxiliary heard Dr. Mal Rumph, husband of the Auxiliary president, talk concerning suitable literature to be distributed by the Auxiliary at the Fort Worth Fat Stock Show. The Auxiliary will maintain a booth with the financial help of the society and the State Medical Association from January 26 to February 4.

In addition to the business meeting auxiliary members and their husbands at the Christmas luncheon were entertained by the Southwestern Singers of the Baptist Seminary, singing parts of Handel's "Messiah."

On January 12 the auxiliary met in Fort Worth for its regular business session. Senator Keith Kelley, Fort Worth, spoke on how the auxiliary members could effectively combat the encroachment of a socialistic form of government.—Mrs. Jack E. Daly, Publicity Secretary.

Twelfth District Auxiliary

At the January 9 meeting in Temple of the Auxiliary to the Twelfth District Medical Society Mrs. G. V. Brindley, Temple, outlined the Twelve Point Program of the American Medical Association and stressed that members should uphold and promote the policies of the A.M.A. Mrs. John Talley, Waco, district president, presided.

New officers elected for the year are Mrs. L. R. Talley, Temple, president; Mrs. Richard Henry Harrison, Jr., Bryan, vice-president; Mrs. R. J. Hanks, Waco, secretary; and Mrs. S. H. Burnett, Corsicana, press reporter. After the business session members joined their husbands for a luncheon.—Mrs. S. H. Burnett, Press Reporter.

DEATHS

N. W. KARBACH, SR.

Dr. Nelson William Karbach, Sr., Houston, Texas, died from a cerebral hemorrhage November 29, 1950.

The son of William and Alma (Eickenroht) Karbach, Dr. Karbach was born June 8, 1899, in New Braunfels. He attended high school in Beasley and was graduated in pharmacy from the University of Texas, Austin, in 1918. After practicing pharmacy in Houston for fifteen years, he entered Rice Institute to complete premedical courses and went on to receive a degree in medicine from the University of Texas Medical Branch, Galveston, in 1938. During his senior year he was an instructor in ear, nose, and throat, and upon his graduation he served an internship at St. Mary's Infirmary, Galveston. He then returned to Houston to practice medicine. Recently he and his son, Dr. Nelson W. Karbach, Jr., had shared offices.

Dr. Karbach was a member of the Harris County Medical Society and its affiliated organizations, the State Medical Association, and American Medical Association. He was also a member of the American, Texas, and Harris County Academies of General Practice. He was a member of Alpha Mu Pi Omega medical fraternity, and the alumni associations of the Main Branch and Medical Branch of the University of Texas and of Rice Institute. He was on the staffs of Memorial, Methodist, and St. Joseph's Hospitals. Dr. Karbach was a member of the Methodist Church and the Houston Chamber of Commerce. From October 2 until November 26, 1918, Dr. Karbach was a private in the Student Army Training Corps at the University of Texas, Austin.

Surviving Dr. Karbach are his wife, the former Miss Vida Eastman, whom he married in Rosenberg, December 24, 1920; Dr. Karbach, Jr., now a captain stationed at Randolph Field; two daughters, Mrs. Thomas D. Watson and Mrs. Arthur D. Werner, both of Houston; his mother, Mrs. Alma Karbach, Houston; three sisters, Mrs. B. E. Eismann and Mrs. Jimmy Brinkley, both of Houston, and Mrs. Claude Hausley, San Antonio; a brother, Chester W. Karbach, Laredo; and one grandchild.

An obituary ordinarily will not be published more than four months after date of death. Cooperation in reporting deaths of physicians and in furnishing appropriate biographical material promptly is solicited.

R. R. JACKSON

Dr. Rice Robinson Jackson, Dallas, Texas, died December 7, 1950, in a Dallas hospital from coronary occlusion.

Dr. Jackson was born June 7, 1877, in Mexia, the son of Ben Walter and Ellen (Robinson) Jackson. He attended Southwestern University, Georgetown, and was graduated from Jefferson Medical College, Philadelphia, in 1905. After serving an internship at St. Joseph Hospital, Philadelphia, Dr. Jackson came to Dallas, where he had been in practice for approximately forty years.

Since coming to Dallas, Dr. Jackson had been a member of Dallas County Medical Society, the State Medical Association, and the American Medical Association. In 1946 he was elected to honorary membership in the state organization. He was a member of the W. W. Keene Surgical Society of Jefferson County Medical College and of the Southern Medical Association. Dr. Jackson was a steward in Grace Methodist Church.

Surviving Dr. Jackson are his wife, the former Mrs. Irene (Cox) Hogan, whom he married May 17, 1947; four sons, Gilbert S. Jackson and Rice R. Jackson, Jr., both of Houston; Gordon P. Jackson, Weslaco; and Henry A. Jackson, Aztec, N. Mex.; a brother, Henry E. Jackson, San Angelo; and a sister, Mrs. Nelle Parker, Dallas.

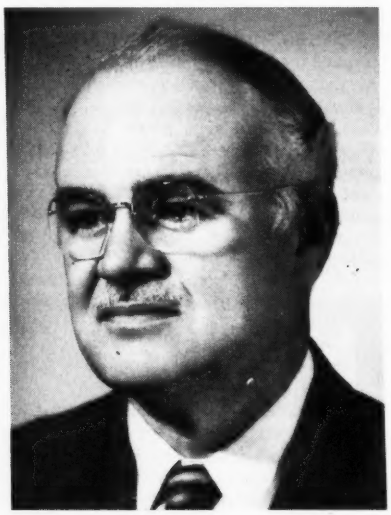
J. V. FLEMING, JR.

Dr. Joe Vandiver Fleming, Jr., Elgin, Texas, died from a gastric duodenal hemorrhage December 20, 1950, in an Austin hospital.

Born April 7, 1907, in Beaumont, Dr. Fleming spent his youth on a ranch in Arizona. He returned to Texas to attend the University of Texas in Austin and was graduated in

medicine from the University of Texas Medical Branch, Galveston, in 1933. He served an internship at Brackenridge Hospital, Austin, and then became house physician there. In 1934 he went to Elgin, where he established the Fleming Hospital in 1938 and built up a large practice.

Dr. Fleming was active in the Bastrop County Medical Society, which he had served as both secretary and president; State Medical Association, to which he had been a delegate; and American Medical Association. He was a councilor and



DR. JOE V. FLEMING, JR.

member of the legislative committee of the Private Clinic and Hospital Association, and member of the Seventh District Medical Society and the Texas and American Academies of General Practice. Dr. Fleming was equally active in community life, serving as president of the Elgin School Board, chairman of the Elgin Park Board, and deacon in the First Baptist Church. He was a charter member of the University of Texas chapter of Alpha Epsilon Delta, honorary premedical fraternity, and a member of Theta Kappa Psi medical fraternity.

His hobby of working with tools had been developed to an unusual degree by Dr. Fleming, who built a laundry, an ice-making machine, an air-conditioning unit, and an oxygen system for his hospital.

Surviving Dr. Fleming are his wife, the former Miss Frances Louisa Murray, whom he married June 10, 1934, in Galveston, and two daughters, Mary Carol and Jan. Other survivors include his parents, Mr. and Mrs. J. V. Fleming, Sr., Elgin; two brothers, J. H. Fleming. Stephenville, and C. C. Fleming, Houston; and four sisters, Mrs. John Oliver, Tyler; Mrs. Charles Coates, Houston; Mrs. Don Kennemer, San Angelo; and Mrs. A. A. Pinnelli, Elgin.

W. J. POLLARD

Dr. Willis John Pollard, former vice-president of the State Medical Association, died November 16, 1950, in Wichita Falls, Texas, at the age of 91.

Dr. Pollard, the son of Frank B. and Cassandra (Sealy) Pollard, was born October 14, 1859, on a plantation near Ruston, La. He received his early education from his mother and at a school in Downsville, La. Injuries from an accident when he was a small boy left him dependent on a walking cane, and this experience encouraged him to give up a school teaching job to study medicine at Tulane University in New Orleans. He was graduated in medicine in 1886 and practiced for a time in Downsville and Gibsland, La., before moving to Kaufman, where he was active for about thirty years. In 1923 Dr. Pollard joined the staff of the Wichita Falls State Hospital, and he retired from the position of assistant superintendent in 1945.

Throughout his life in Texas Dr. Pollard was a member of the Kaufman County Medical Society, the State Medical Association, and the American Medical Association. He was secretary of the county society at one time and was vice-president of the state organization in 1920-1921. He was elected to honorary membership in the State Medical Association in 1941. Dr. Pollard was a member of the Methodist Church.

Dr. Pollard's wife, the former Miss Florence Irene Pipes, whom he married in Kaufman in 1888, died in May, 1938, and two sons also preceded him in death. One son, W. J. Pollard, Jr., Los Angeles, and two daughters, Mrs. A. R. Dillard and Mrs. Fern Anderson, both of Wichita Falls, survive. Believed to be the oldest living graduate of Tulane University at the time of his death, Dr. Pollard came from a long lived family. Two brothers, Dean Pollard, New Iberia, La., aged 97, and M. A. Pollard, Houston, aged 89, and one sister, Mrs. Della Sealy, Houston, aged 94, are still living and active, and his father died at 87 years and his mother at 92.

W. A. WOOD

Dr. William Alva Wood, Waco, Texas, died December 6, 1950, at his home, where he had been ill for nine years as a result of a broken hip.

Born October 7, 1862, in Fayetteville, Ala., Dr. Wood was the son of a physician, Dr. Eason Blue Wood, and Sallie (Barrett) Wood. When he was 10 years old, Dr. Wood moved with his parents to Hill County, Texas, and grew up in Hubbard. He entered Baylor University, Waco, and upon his graduation in 1885 he went to Jefferson Medical College, Philadelphia, from which he received a doctor of medicine degree in 1887. He returned to Hubbard to begin practice.

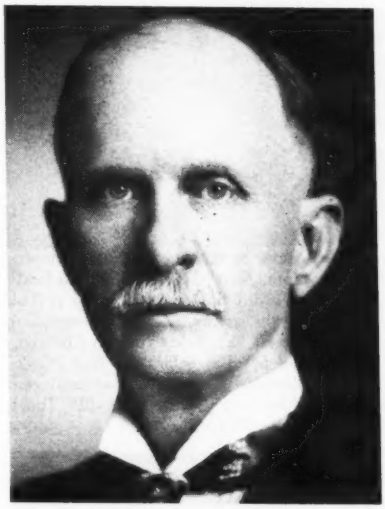
Dr. Wood and his brother, Dr. John Wood, built and equipped a private hospital in Hubbard in 1910 and operated it in connection with the Hubbard Hot Well. In Hubbard, he was local surgeon for the Cotton Belt Railway for twenty-five years; he was also local surgeon for the Trinity and Brazos Valley Railway. In 1917 he moved to Waco, where he was active until his accident. There he was physician and surgeon for the Methodist Orphanage for twenty-three years.

A member throughout his professional career of the American Medical Association and State Medical Association, first through Hill County Medical Society and then the McLennan County Medical Society, Dr. Wood was elected to honorary membership in the state organization in 1943. He was a member of the Twelfth District Medical Society, serving in 1912 as its president. For many years he regularly attended meetings of the American Medical Association, and in 1914 he went to a meeting of the association in London. He also regularly attended postgraduate clinics in medical centers of this country. Dr. Wood was also a member of the Southern Surgical Association, Southwestern Medical Association, and Clinical Surgeons of North America.

Dr. Wood was a member of the Methodist Church and served as steward for congregations in Hubbard and Waco. For many years he taught a large men's Bible class in Waco.

April 4, 1888, Dr. Wood married Miss Nina Lynn

Jameson of Bryan. He is survived by his wife; five sons, J. K. Wood, David E. Wood, and W. P. Wood, all of Waco; W. M. Wood, Eugene, Ore.; and E. C. Wood, Fort Worth;



DR. W. A. WOOD

a brother, Eugene Wood, Abilene; a sister, Mrs. Dixie Wood Johnson, Hubbard; four grandchildren; and seven great grandchildren.

C. F. CRAIG

Dr. Charles Franklin Craig, Colonel, U. S. Army Medical Corps, Retired, died December 9, 1950, in San Antonio of peritonitis.

Born in Danbury, Conn., on July 4, 1872, Dr. Craig was the son of William Ed and Maria Hamlin (Payne) Craig. Dr. Craig was graduated from Yale University School of Medicine, New Haven, in 1894; he was awarded an honorary master of arts degree from Yale University in 1915 and the honorary degree doctor of science from Tulane University, New Orleans, in 1915. Beginning his medical career in 1898, Dr. Craig until 1903 was acting assistant surgeon in the U. S. Army, during which time he saw service as pathologist and bacteriologist at various hospitals in the United States, Cuba, and the Philippines. In Manila from 1906 to 1907 he served as a member of the U. S. Army Board for Study of Tropical Diseases. From 1907 to 1909 Dr. Craig was at the Central Department Laboratory headquarters, Fort Leavenworth, Kansas; he then served at various posts over the United States, including El Paso. Other posts which he held subsequently were attending surgeon, New York; assistant curator of the Army Medical Museum, assistant professor of bacteriology and clinical diagnosis, Army Medical School, and associate professor of bacteriology, Medical Department, George Washington University, Washington, D. C. Dr. Craig from 1913 to 1916 was again stationed at the laboratory at Fort Leavenworth, serving as commanding officer.

Dr. Craig in 1918 organized the Yale Army Laboratory School, which he commanded until 1919. He held several important posts from 1919 until 1931, including professor of bacteriology, parasitology, and preventive medicine, Director of Laboratories, and director and commandant of clinical pathology at the Army Medical School and assistant commandant of Walter Reed Hospital, Washington, D. C., and medical inspector in Honolulu, Hawaii.

Upon his retirement from active duty in 1931 Dr. Craig accepted the position professor of tropical medicine and director of the department at Tulane University School of Medicine, New Orleans, where he remained until 1938; he had been emeritus professor of tropical medicine there since 1939. Though retired, in 1949 Dr. Craig was appointed consultant at the Fourth Army Laboratory, Brooke General Hospital, Fort Sam Houston, San Antonio, in which capacity he served until his death.

Dr. Craig was a member of the American Medical Association and the State Medical Association through Bexar County Medical Society, being elected to honorary membership in 1945. Prior to coming to Texas, he had been a

DR. CHARLES FRANKLIN CRAIG

member of the Connecticut State Medical Society. He was a past president of the following organizations: American Society of Tropical Medicine, American Academy of Tropical Medicine, and American Society of Parasitologists; in addition, he retained memberships in several international associations of tropical and preventive medicine and the International Leprosy Association. A fellow of both the American College of Surgeons and American College of Physicians, Dr. Craig was a life member of the Association of Military Surgeons and was a member of the American Public Health Association, the American Society of Clinical Pathologists, and the Washington Academy of Sciences. He was a member of Alpha Omega Alpha, honorary medical fraternity; Nu Sigma Nu, medical fraternity; and Sigma Xi fraternity. He was formerly president of the Yale Medical Alumni Association and a member of the Army and Navy Country Club, Washington, D. C.

The author of ten books and a contributor to eight others, including Osler's "Modern Medicine," Dr. Craig was the editor of the *American Journal of Tropical Medicine* and associate editor of the *American Journal of Parasitology*. He received the following awards: the Distinguished Service Medal of the U. S. Army, 1922; the Theobald Smith gold medal of the American Academy of Tropical Medicine for extensive research in that field, 1943; the Franklin Medal of the San Antonio Scientific Society in recognition of his writings, 1945; and the Association of Military Medicine Founders Medal for notable contributions to military medicine, 1948.

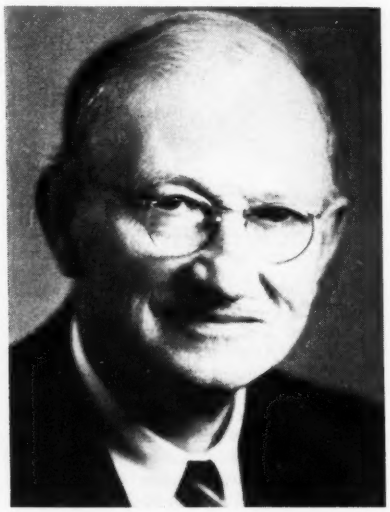
On July 7, 1893, Dr. Craig was married to Miss Lillian Osmun, who survives him. Other survivors are a daughter, Mrs. Marjorie Craig Goolrick, San Antonio; a son, Major General Edward A. Craig, presently serving with the First Marine Division in the Korean theater; and two sisters, Mrs. Emma Green, New Rochelle, N. Y., and Mrs. Almira Cornwall, Portland, Conn.

J. M. HORN

Dr. Jesse Mayo Horn, Brownwood, Texas, the father of Dr. J. Morris Horn, Dallas, died from coronary thrombosis November 11, 1950, in the hospital he helped establish, the Medical Arts Hospital, Brownwood.

Dr. Horn was born May 3, 1873, in Logansport, La., the son of L. W. and Elizabeth M. Horn. His early education was acquired in Whitesboro Normal College, Whitesboro, the University of Texas, Austin, and the University of the South, Sewanee, Tenn. In 1903 he was graduated from Kentucky University Medical Department, Louisville. Dr. Horn later did postgraduate work at Johns Hopkins Hospital, Baltimore, the Mayo Clinic, Rochester, Minn., and at other schools and hospitals in New York, Chicago, and Philadelphia. He began his medical career in Bastrop and practiced in Paige, Jonah, and Pendleton, before moving in 1909 to Brownwood; there he remained in active practice until 1948.

A member of the American Medical Association and the State Medical Association continuously since 1906, Dr. Horn



DR. J. M. HORN

was president in 1933 and secretary in 1932 and from 1937 to 1939 of Brown-Comanche-Mills-San Saba Counties Medical Society. He formerly was president, vice-president, and secretary of the Fourth District Medical Society. He was named an honorary member of the Association in 1948. At the 1935 annual session in Dallas Dr. Horn was awarded a certificate of merit jointly with Drs. C. M. Hamlin and J. F. Pilcher of the University of Texas Medical Branch for one of the best scientific exhibits at the session. For seventeen years he was the city health officer of Brownwood. In 1928 he helped organize the Medical Arts Hospital Corporation and the Medical Arts Clinic and served from 1941 to 1948 as secretary of the corporation. Dr. Horn was an elder in the First Christian Church for more than a quarter of a century. He was a member of the Masonic Order, the Shrine Order, Knights of Pythias, and International Order of Odd Fellows.

On July 13, 1902, at Bastrop Dr. Horn married Miss Marguerite Morris, who survives. Other surviving relatives are his son, Dr. J. Morris Horn, Dallas; three daughters, Mrs. R. R. Holloway, Brownwood, Mrs. A. J. Needham, Coleman, and Mrs. H. W. Webb, San Antonio; four brothers, E. J. Horn and John W. Horn, Logansport, La., and L. A. Horn and C. D. Horn, Joaquin; and ten grandchildren.

J. C. A. GUEST

Dr. James C. A. Guest, Wichita Falls, Texas, died November 11, 1950, at his home.

Born December 13, 1873, in Kingston, Texas, Dr. Guest was the son of Joseph J. and Mary (Williams) Guest. He attended public school in Kingston and Celeste. In 1903 he was graduated from Memphis Hospital Medical College, Memphis, Tenn. He did postgraduate study at Tulane University in New Orleans, at Cook County Hospital, the Lying-In Hospital, and Beck's East Side Clinic in Chicago, the New York Post-Graduate Medical School in New York, and the Potter Clinic in Buffalo. His medical career began in Pike, Texas, after which he practiced in Lingleville, Texas; Dustin, Okla.; and Panhandle, Texas. In 1906 Dr. Guest moved to

DR. JAMES C. A. GUEST

Wichita Falls, where he was actively engaged in medical practice until ill health forced him to retire in 1947.

Dr. Guest was affiliated with the American Medical Association and the State Medical Association through the Wichita County Medical Society and served the latter organization both as its president and its secretary. He belonged to both the Texas and the Central States Obstetrical and Gynecological Societies. He was a member of the staff of the Wichita Falls Clinic Hospital from 1923 until his retirement. He held membership in the Masonic Order, Knights of Pythias, and Woodmen of the World. An active steward in the Methodist Church, Dr. Guest was a past chairman of the Board of Stewards of the First Methodist Church, Wichita Falls.

Dr. Guest married Miss Minnie May Sweeton in Sulphur Springs on June 28, 1897. Mrs. Guest died May 7, 1949. Surviving are two sons, James W. Guest and Weldon S. Guest, Wichita Falls; a brother, Dr. J. L. Guest, San Antonio and Plainview; a sister, Mrs. Bruce W. Bryant, Austin; and two grandchildren.